Use these links to rapidly review the document
TABLE OF CONTENTS
INDEX TO CONSOLIDATED FINANCIAL STATEMENTS

As filed with the Securities and Exchange Commission on February 17, 2015

Registration No. 333-

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION

WASHINGTON, D.C. 20549

FORM S-1

REGISTRATION STATEMENT
UNDER
THE SECURITIES ACT OF 1933

ARCADIA BIOSCIENCES, INC.

(Exact Name of Registrant as Specified in Its Charter)

Arizona	**2870**	**81-0571538**
(State or Other Jurisdiction of Incorporation or Organization)	(Primary Standard Industrial Classification Code Number)	(I.R.S. Employer Identification Number)

202 Cousteau Place, Suite 200
Davis, CA 95618
(530) 756-7077
(Address, Including Zip Code, and Telephone Number, Including Area Code, of Registrant's Principal Executive Offices)

Eric J. Rey
President & Chief Executive Officer
202 Cousteau Place, Suite 200
Davis, CA 95618
(530) 756-7077
(Name, Address, Including Zip Code, and Telephone Number, Including Area Code, of Agent of Service)

Copies to:

Karen A. Dempsey, Esq. **Christopher J. Austin, Esq.** **Michael J. Hopp, Esq.** **Orrick, Herrington & Sutcliffe LLP** **The Orrick Building** **405 Howard Street** **San Francisco, CA 94105**	**Wendy S. Neal, Esq.** **Vice President & Chief Legal Officer** **4222 East Thomas Road, Suite 245** **Phoenix, AZ 85018**	**Andrew S. Williamson, Esq.** **Charles S. Kim, Esq.** **David G. Peinsipp, Esq.** **Cooley LLP** **101 California Street, 5th Floor** **San Francisco, California 94111**

Approximate date of commencement of proposed sale to the public:
As soon as practicable after the effective date of this Registration Statement.

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, check the following box. o

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, please check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. o

If this Form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. o

If this Form is a post-effective amendment filed pursuant to Rule 462(d) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. o

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer o	Accelerated filer o	Non-accelerated filer ☒ (Do not check if a smaller reporting company)	Smaller reporting company o

CALCULATION OF REGISTRATION FEE

Title Of Each Class Of Securities To Be Registered	Proposed Maximum Aggregate Offering Price(1)	Amount Of Registration Fee
Common Stock, par value $0.001 per share	$86,250,000	$10,023

(1) Estimated solely for the purpose of computing the amount of the registration fee pursuant to Rule 457(o) under the Securities Act of 1933, as amended. Includes the aggregate offering price of additional shares the underwriters have the option to purchase.

The registrant hereby amends this registration statement on such date or dates as may be necessary to delay its effective date until the registrant shall file a further amendment which specifically states that this registration statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act of 1933, as amended or until the registration statement shall become effective on such date as the Securities and Exchange Commission, acting pursuant to said Section 8(a), may determine.

Table of Contents

SUBJECT TO COMPLETION, DATED FEBRUARY 17, 2015

Preliminary Prospectus

Shares

Common Stock

This is the initial public offering of shares of common stock of Arcadia Biosciences, Inc. Prior to this offering, there has been no public market for our common stock. The initial public offering price of our common stock is expected to be between $ and $ per share.

We have applied to list our common stock on The NASDAQ Global Market under the symbol "RKDA."

The underwriters have an option to purchase a maximum of additional shares of common stock from us.

We are an "emerging growth company" as that term is used in the Jumpstart Our Business Startups Act of 2012, or the JOBS Act, and, as such, we have elected to comply with certain reduced public company reporting requirements for this prospectus and future filings.

Investing in our common stock involves a high degree of risk. See "Risk Factors" beginning on page 12.

	Price to Public	Underwriting Discounts and Commissions(1)	Proceeds to Arcadia
Per Share	$	$	$
Total	$	$	$

(1) See "Underwriting" beginning on page 139 for additional information regarding underwriting compensation.

Delivery of the shares of common stock will be made on or about , 2015.

Neither the Securities and Exchange Commission nor any other regulatory body has approved or disapproved of these securities or passed upon the accuracy or adequacy of this prospectus. Any representation to the contrary is a criminal offense.

Credit Suisse **J.P. Morgan** **Piper Jaffray**

The date of this prospectus is , 2015

Arcadia
BIOSCIENCES

Agronomic technologies:

- Nitrogen Use Efficiency
- Water Use Efficiency
- Drought Tolerance
- Salinity Tolerance
- Heat Tolerance
- Herbicide Tolerance

Key crops:

- Rice
- Wheat
- Soybean
- Corn
- Cotton
- Sugarcane

TABLE OF CONTENTS

ABOUT THIS PROSPECTUS

You should rely only on the information contained in this prospectus or contained in any free writing prospectus filed with the Securities and Exchange Commission. Neither we nor the underwriters have authorized anyone to provide you with additional information or information different from that contained in this prospectus or in any free writing prospectus filed with the Securities and Exchange Commission. We are offering to sell, and seeking offers to buy, our common stock only in jurisdictions where offers and sales are permitted. The information contained in this prospectus is accurate only as of the date of this prospectus, regardless of the time of delivery of this prospectus or of any sale of our common stock.

Through and including , 2015 (the 25th day after the date of this prospectus), all dealers effecting transactions in these securities, whether or not participating in this offering, may be required to deliver a prospectus. This is in addition to a dealer's obligation to deliver a prospectus when acting as an underwriter and with respect to an unsold allotment or subscription.

This prospectus includes statistical, market and industry data and forecasts which we obtained from publicly available information and independent industry publications and reports that we believe to be reliable sources. These publicly available industry publications and reports generally state that they obtain their information from sources that they believe to be reliable, but they do not guarantee the accuracy or completeness of the information. Although we believe that these sources are reliable, we have not independently verified the information contained in such publications. We obtained certain trait value data used in the "Prospectus Summary" and "Industry Overview" sections of this prospectus from a third-party report we commissioned Phillips McDougall to prepare. Phillips McDougall has filed a consent to be named in this prospectus. Certain estimates and forecasts involve uncertainties and risks and are subject to change based on various factors, including those discussed under the headings "Special Note Regarding Forward-Looking Statements" and "Risk Factors" in this prospectus.

Neither we nor any of the underwriters have done anything that would permit this offering or possession or distribution of this prospectus in any jurisdiction where action for that purpose is required, other than in the United States. Persons outside the United States who obtain this prospectus

must inform themselves about, and observe any restrictions relating to, the offering of the shares of common stock and the distribution of this prospectus outside of the United States.

"Arcadia Biosciences," "Sonova" and "Sonova GLA Safflower Oil and design" are our registered trademarks in the United States and, in some cases, in certain other countries. Our unregistered trademarks and service marks in the United States include: "Sonova 400" and "Sonova ULTRA." This prospectus also contains trademarks, service marks, and trade names of other companies. Solely for convenience, the trademarks, service marks and trade names referred to in this prospectus may appear without the ®, TM, or SM symbols, but such references do not constitute a waiver of any rights that might be associated with the respective trademarks, service marks, or trade names.

PROSPECTUS SUMMARY

This summary highlights selected information that is presented in greater detail elsewhere in this prospectus. This summary does not contain all of the information you should consider before investing in our common stock. You should read this entire prospectus carefully, including the sections titled "Risk Factors," "Management's Discussion and Analysis of Financial Condition and Results of Operations" and our consolidated financial statements and the related notes included elsewhere in this prospectus, before deciding whether to purchase shares of our common stock.

Overview

We are a leading agricultural biotechnology trait development company with an extensive and diversified portfolio of late-stage crop productivity and product quality traits addressing multiple crops that supply the global food and feed markets. We have achieved this leadership position based on our development collaborations with global agricultural leaders, recognition by third parties, and our track record of success in trait development since our founding in 2002. Our traits are focused on high-value enhancements that increase crop yields by enabling plants to more efficiently manage environmental and nutrient stresses, and that enhance the quality and value of agricultural products. Our traits increase value not only for farmers, but also for users of agricultural products. Our target market is the $39.4 billion global seed market. Our goal is to increase the value of this market significantly by increasing yields, and to capture a portion of the increased value. There currently are more than 50 products in development incorporating our traits and there are 13 that have demonstrated efficacy in field trials, one that is in the process o completing the regulatory process, and one that is currently on the market.

Our crop productivity traits are being utilized by our commercial partners to develop higher yielding seeds for the most widely grown global crops, including wheat, rice, soybean, corn, and sugarcane, as well as for other crops such as cotton, canola, turf, and trees. Our business model positions us at the nexus of basic research and commercial product development, as we apply our strong product development and regulatory capabilities to collaborate with, and leverage the skills an investments of, upstream basic research institutions and downstream commercial partners. We believe our approach significantly reduces risk and capital requirement while simplifying and expediting the product development process. We also believe that our collaboration strategy leverages our internal capabilities, enabling us to capture much higher value than would otherwise be the case, and enabling commercial partners to develop and commercialize products more cost-effectively.

Our business model focuses on creating value by leveraging collaborator investments and capabilities upstream in basic research, and downstream in product development and commercialization. We bridge the gap between basic research and commercial development, reducing risk and adding value as a result. We reduce risk and avoid most of the costs associated with basic research by acquiring trait technologies that have already completed initial feasibility screening, thus achieving proof of concept, through basic research carried out elsewhere. We further develop these technologies by optimizing function and validating performance through intensive field trial testing in multiple crops. We then form collaborations with major seed and consumer product companies who develop and commercialize product incorporating our traits. In select instances, we also work with our commercial partners to make any regulatory filings required to support commercial launch of the trait in order to increase our share of the value created by the trait. Field trial data to date in multiple major commodity crops has shown yield improvements attributable to our Nitrogen Use Efficiency, or NUE, trait of greater than 10%. For example, rice plants with our NUE trait, tested in independent field trials over three years from 2012 to 2014 in multiple environments, had an average yield improvement of 27% compared to controls.

By licensing later stage de-risked technologies to our commercial partners, we expect to achieve significantly greater value than generally earned for access to early stage traits. Our license agreements

typically include upfront and annual license fees, as well as multiple milestone payments for key product development stages such as demonstration of greenhouse efficacy, demonstration of field efficacy, regulatory submission, regulatory approval, and commercial launch. Following commercialization of a product utilizing one or more of our traits, we share in the value of the traits realized by our commercial partners. We believe that this broad and balanced approach diversifies and reduces risk, allowing us to address multiple end markets through strong established channels.

We have formed strategic partnerships and developed strong relationships with global agricultural leaders for development and commercialization of our traits in major crops and consumer products. Our collaborators include subsidiaries or affiliates of Limagrain (Vilmorin & Cie), Mahyco (Maharashtra Hybrid Seeds Company Limited), DuPont Pioneer (E.I. du Pont de Nemours and Company), SES Vanderhave, Genective (a joint venture between Limagrain and KWS SAAT), Scotts, U.S. Sugar, Abbott, Ardent Mills, Bioceres, and others. Additionally, in order to increase our participation in the value of two major crops, wheat and soybean, we have formed two joint ventures. Limagrain Cereal Seeds LLC is our joint venture with Limagrain for the development and commercialization of wheat products for North America. Limagrain is the world's fourth-largest seed company. Verdeca LLC is our joint venture with Bioceres for the development and deregulation of soybean trait globally.

The strength of our internal capabilities and collaboration strategy enables us to quickly identify and develop valuable traits and bring them to market, as we hav demonstrated through commercializing Sonova 400 GLA safflower oil in less than six years from technology acquisition to commercial launch. Sonova 400 GLA safflower oil is a key ingredient in multiple branded nutritional supplements marketed through GNC stores and other major U.S. retailers.

Our headquarters and primary research and development facilities are located in Davis, California. We have additional facilities in Seattle, Washington; America Falls, Idaho; and Phoenix, Arizona. As of December 31, 2014, we had 77 full-time employees.

Industry Background

In recent decades, agricultural biotechnology has been a major driving force for improving farm economics by introducing genetically modified, or GM, seeds, with traits that reduce the cost of managing crop biotic stresses such as weeds, insects, and microbial pests. The first agricultural biotechnology traits, herbicide tolerance and insect resistance, were developed primarily by companies with deep expertise and a long heritage in crop protection chemistry and pest management. Seeds with these traits have achieved rapid growth and strong commercial success, reaching market share in excess of 90% in key crops and countries as of 2013.

Next generation seed trait research is focused on the development of new technologies that address unmet needs such as abiotic stress tolerance and agricultural product quality. Abiotic plant stresses, or those caused by non-living factors such as heat, drought, flooding, salinity, and nutrient availability, can have a significantly greater negative impact on crop yield than biotic stresses. Successfully increasing crop yields by addressing these stresses potentially creates much greater value than created by the first wave of biotic stress management traits. Commercially available solutions to manage abiotic stresses are currently limited, but have been the focus of substantial innovation efforts. Agricultural product quality traits increase the value of crops to crop processors, food and feed manufacturers, and consumers by altering the performance of the harvested crop in end market products.

Innovative traits can provide significant additional value for farmers. Planting seed is a relatively low cost input for farmers, representing less than 10% of average total costs in 2013 according to the U.S. Department of Agriculture, or USDA. GM seeds can provide farmers with increased profitability at a relatively low increase in operating costs by means of increased yields, reduced costs of inputs such

as chemicals, or enhanced product quality. The historic success of increasing farm profits through the use of GM seeds has fueled the development of the agricultural biotechnology industry, and farmers have historically shared a portion of their economic benefit with the GM seed provider in the form of seed premiums.

The following table, based on a 2015 Phillips McDougall analysis that we commissioned, sets forth an estimated range of incremental value increase that may be attributed to the addition of a novel newly developed trait in the most widely grown global crops and key growing regions. Incremental value increase refers to the total revenue potential for seed providers generated from the premium charged on biotechnology seeds due to the added value of the improved trait. This estimated incremental value increase, or trait commercial value, was calculated by multiplying the estimated number of acres per country that could be planted with a particular biotechnology trait by the estimated premiums that will be charged to growers by seed providers. The values displayed are in constant 2013 U.S. Dollar terms.

		Estimated Trait Commercial Value ($ Million)(1)		
Trait	**Crop**	**From**	**To**	**Key Growing Regions(2)**
Nitrogen Use Efficiency	Corn	1,285	2,205	NAFTA, LATAM, China
	Soybeans	747	1,269	NAFTA, LATAM
	Cotton	189	312	NAFTA, LATAM, India+
	Canola	142	227	NAFTA, LATAM, India, China
	Rice	535	910	India+, China, Asia
	Wheat	573	1,136	NAFTA, Europe, India+, China, Australia
	Sugarcane	42	70	NAFTA, LATAM, India, China
	Total	*3,513*	*6,129*	
Water Use Efficiency	Corn	557	976	NAFTA, LATAM, China
	Soybeans	373	642	NAFTA, LATAM
	Cotton	97	176	NAFTA, LATAM, India+
	Canola	75	114	NAFTA, LATAM, India, China
	Rice	269	535	India+, China, Asia
	Wheat	487	569	NAFTA, Europe, India+, China, Australia
	Sugarcane	25	53	NAFTA, LATAM, India, China
	Total	*1,883*	*3,065*	
Salinity Tolerance	Soybeans	373	523	NAFTA, LATAM
	Cotton	97	176	NAFTA, LATAM, India+
	Canola	75	114	NAFTA, LATAM, India, China
	Rice	269	535	India+, China, Asia
	Wheat	429	569	NAFTA, Europe, India+, China, Australia
	Total	*1,243*	*1,917*	*NAFTA, LATAM, India, China*
Heat Tolerance	Corn	557	976	NAFTA, LATAM, China
	Soybeans	373	523	NAFTA, LATAM
	Cotton	97	176	NAFTA, LATAM, India+
	Canola	75	114	NAFTA, LATAM, India, China
	Rice	269	535	India+, China, Asia
	Wheat	429	569	NAFTA, Europe, India+, China, Australia
	Sugarcane	21	41	NAFTA, LATAM, India, China
	Total	*1,821*	*2,934*	
Herbicide Tolerance	Wheat	417	571	NAFTA, Europe, India+, China, Australia
All Traits	***All Crops***	***8,878***	***14,616***	

(1) The range of estimated increase in price attributed to the addition of a novel newly developed trait for each combination of traits, crop, and region.

(2) NAFTA= Canada, U.S. Mexixo; LATAM= Central & South America; India+= India, Pakistan, Bangladesh, Sri Lanka; Asia= S.E. Asia (excluding China)

The development of GM seed traits is currently concentrated in a limited number of large seed companies, including Monsanto, DuPont Pioneer, Syngenta, Limagrain, Dow AgroSciences, KWS SAAT, and Bayer CropScience. According to Phillips McDougall, the leading 11 seed and trait companies as a group invested $4.1 billion in seed and trait research and development in 2013.

Our Products and Pipeline

There currently are more than 50 products in development incorporating our traits and there are 13 that have demonstrated efficacy in field trials, one that is in th process of completing the regulatory process, and one that is on the market. We use both GM and non-GM technologies to develop our traits, which enables us to select the approach most suited for the particular trait, crop and market. Our agricultural productivity traits are designed to substantially increase crop yields and farmer income. They do so either by improving efficiency in the use of key inputs, such as fertilizer and water, or by increasing tolerance to environmental stresses, such as drought, heat and salinity. Our existing portfolio of agricultural productivity traits includes Nitrogen Use Efficiency, or NUE, Water Use Efficiency, or WUE, Drought Tolerance, Salinity Tolerance, Heat Tolerance, and Herbicide Tolerance. Field trial results have demonstrated significant yield improvements resulting from our agricultural productivity traits in multiple crops and geographies.

Our agricultural product quality traits are designed to increase the value of harvested products by improving specific compositional qualities of oilseeds and grains. These traits include Enhanced Nutrition Grains and High Value Nutritional Oils, including Sonova 400 GLA safflower oil and Sonova Ultra GLA safflower oi which we refer to as our Sonova products.

The table below summarizes our current commercial product and our pipeline of products that are at Phase 3 or higher in the product development cycle, which includes products in advanced stages of development or on the market. The product development cycle is discussed in greater detail in "Industry Overview—Innovation and Commercialization Process in Biotech Seed Traits." The table also identifies the crops, collaborators, and markets that we and our collaborators are addressing with these products.

Program	Crop	Collaborator(s)	Phase D	1	2	3	4	5	Key Markets
PRODUCTIVITY TRAITS									
Nitrogen Use Efficiency (NUE)	Wheat	Limagrain, Mahyco, CSIRO, ACPFG							Global
	Rice	Mahyco, AATF							Asia
	Canola	-							N. America, Asia
	Barley	-							N. America, Australia
Water Use Efficiency (WUE) **Drought Tolerance (DT)**									
	Soybean (DT)	Verdeca							Americas, Asia
	Wheat (DT)	Bioceres							Global
Salinity Tolerance (ST)	Rice	Mahyco							Asia
Herbicide Tolerance*	Wheat	Confidential							Global
Trait Stacks									
NUE/WUE/ST	Rice	AATF							Asia
PRODUCT QUALITY TRAITS									
GLA Oil	Safflower	Abbott							N. America, Asia
Resistant Starch*	Wheat	-							Global
Post Harvest Quality*	Tomato	Bioseed							Asia, N. America
ARA Oil	Safflower	Abbott, DuPont Pioneer							N. America, Asia

Phase: D=Discovery; 1=Proof of Concept; 2=Greenhouse / Early Field Trials; 3=Additional Field Trials / Product Development; 4=Regulatory / Pre-Commercial; 5=Commercialized
* Non GM

Our Strengths

We believe we are strategically positioned to capitalize on the need to increase crop yields and quality of agricultural products globally. Our competitive strength include:

- ***We hold a competitive position in an attractive and fast-growing industry.*** According to Phillips McDougall, the GM seed market grew at an 18.4% CAGR between 2003 and 2013, reaching $20.1 billion, which represented 51% of the $39.4 billion total seed market. We believe that addressing opportunities to increase yield in the much larger market for agricultural products will dramatically expand the size of the GM seed market, and that w are well-positioned to take advantage of this with our portfolio of late-stage, high-value traits, and our ability to reduce product development risk and leverage the capabilities of our licensees and partners. We believe the yield-enhancing benefits of our agricultural productivity traits provide significan value to farmers, based on field trials to date.

- ***We have a broad and diverse portfolio of products and partners.*** Our product portfolio consists of a wide variety of traits that are applicable to major crops in key geographic markets and address agricultural productivity and product quality. The applicability of our product portfolio to these major crops provides us access to multiple large end markets that we believe have demonstrated or have the potential for high growth, such as soybeans in North and South America and wheat and rice globally.

- ***The development stage of our products substantially reduces the risk and time to market.*** We reduce risk and avoid most of the costs associated with basic research by acquiring trait technologies that have already achieved proof of concept and have started Phase 2 of development through basic research carried out elsewhere. We then optimize and validate trait performance through intensive field trials in multiple crops, and license the further de-risked traits to selected collaborators globally. The majority of the products being developed with our traits are at Phase 2 or higher stages of development. Products that have achieved Phase 2 or higher have substantially shorter average development timelines and substantially greater averag probabilities of success than earlier-stage products. See "Industry Overview—Innovation and Commercialization Process in Biotech Seed Traits."

- ***We have demonstrated independent product development and regulatory capabilities.*** Our execution risk is significantly reduced by our in-house scientific and product development expertise, which affords us substantial control over the product development process. Our regulatory expertise enables us to capture additional value in selected instances, and also to expedite the development of products containing our traits. For example, we independently developed and commercialized our first commercial product, Sonova 400 GLA safflower oil, in less than six years from technology acquisition.

- ***We have a seasoned executive team with a diverse blend of technical and commercial experience.*** Our executive team has more than 140 years of combined experience specific to agricultural biotechnology. Several members of our executive team previously worked at industry-leading technology and seed companies, such as Calgene and Monsanto, and all seven executive team members have worked together for nearly ten years.

Our Growth Strategy

We believe that there are significant opportunities to grow our business globally by executing the following elements of our strategy:

- ***Accelerate and broaden the commercialization of our high-impact agricultural productivity traits.*** One of our highest priorities is to accelerate and broaden the commercialization of our key

agricultural productivity traits, such as NUE, WUE, and Drought Tolerance, that are in advanced stages of development with our commercial partners and joint ventures.

- ***Increase the value we capture in selected crops by managing and investing in the regulatory process.*** For certain crops we have the opportunity to invest incrementally in the management of regulatory activities. By doing so, we will increase our share of the trait value from a base range of 15 to 20% to a range of 37 to 50%, depending on the specific crop and trait.

- ***Execute on a range of near-term opportunities in areas that we believe will be materially beneficial.*** Our product quality trait programs, including specialty oils and improved grains, provide opportunities for near-term revenue growth. In particular, our programs for ARA oil and resistant starch wheat are at advanced development stages.

- ***Continue to build our pipeline of next generation and innovative traits.*** We maintain strong relationships with leading basic research institutions and other industry participants, and will continue to partner with them to gain access to new traits and technologies with demonstrated efficacy.

- ***Continue to invest in our human resources and technology infrastructure on a global basis.*** Our highly-skilled and technical employees are critical to our success, and we will continue to invest in development and retention in order to build upon this strength.

Risks Associated with Our Business

Our business is subject to numerous risks, as more fully described in the section entitled "Risk Factors" immediately following this prospectus summary. You should read these risk factors before you invest in our common stock. For example, you should be aware of the following before investing in our common stock:

- We or our collaborators may not be successful in developing commercial products that incorporate our traits.

- Even if we or our collaborators are successful in developing commercial products that incorporate our traits, such products may not achieve commercial success.

- Our product development cycle is lengthy and uncertain, and we may never earn revenues from the sale of products containing our traits.

- We have a history of significant losses, which we expect to continue, and we may never achieve or maintain profitability.

- If ongoing or future field trials by us or our collaborators are unsuccessful, we may be unable to complete the regulatory process for, or commercialize our products on a timely basis.

- Competition in traits and seeds is intense and requires continuous technological development. If we are unable to compete effectively, our financial results will suffer.

Corporate Information

We were incorporated in 2002 in Arizona, and we intend to reincorporate in Delaware prior to the completion of this offering. Our headquarters and primary research and development facilities are located at 202 Cousteau Place, Suite 200, Davis, CA 95618, and our telephone number is (530) 756-7077. Our corporate website address is www.arcadiabio.com. Information contained on our website is not incorporated by reference into this prospectus, and you should not consider any information contained on, or that can be accessed through, our website as part of this prospectus or in deciding whether to purchase our common stock. We have included our website address only as an inactive textural reference and do not intend it to be an active link to our website.

Unless the context otherwise requires, the terms "Arcadia Biosciences," "Arcadia," the "company," "we," "us," and "our" in this prospectus refer to Arcadia Biosciences, Inc. and its consolidated subsidiaries.

Implications of Being an Emerging Growth Company

As a company with less than $1.0 billion in revenues during our last fiscal year, we qualify as an "emerging growth company" as defined in the Jumpstart Our Business Startups Act of 2012, or the JOBS Act. An emerging growth company may take advantage of specified reduced reporting requirements that are otherwise applicable generally to public companies. These provisions include:

- a requirement to have only two years of audited financial statements and only two years of related management's discussion and analysis;
- an exemption from compliance with the auditor attestation requirement on the effectiveness of our internal control over financial reporting;
- an exemption from compliance with any requirement that the Public Company Accounting Oversight Board may adopt regarding mandatory audit firm rotation or a supplement to the auditor's report providing additional information about the audit and the financial statements;
- reduced disclosure about our executive compensation arrangements; and
- exemptions from the requirements to obtain a non-binding advisory vote on executive compensation or a stockholder approval of any golden parachute arrangements.

We will remain an emerging growth company until the earliest to occur of: the last day of the fiscal year in which we have more than $1.0 billion in annual revenues; the date we qualify as a "large accelerated filer," with at least $700 million of equity securities held by non-affiliates; the issuance, in any three-year period, by us of more than $1.0 billion in non-convertible debt securities; and the last day of the fiscal year ending after the fifth anniversary of our initial public offering. We may choose to take advantage of some, but not all, of the available benefits under the JOBS Act. We are choosing to irrevocably "opt out" of the extended transition periods available under the JOBS Act for complying with new or revised accounting standards, but we intend to take advantage of the other exemptions discussed above. Accordingly, the information contained herein may be different than the information you receive from other public companies in which you hold stock.

The Offering

The following information assumes that the underwriters do not exercise their option to purchase additional shares in the offering. See "Underwriting."

Common stock offered by us	shares
Common stock to be outstanding after the offering	shares
Option to purchase additional shares of common stock from us	The underwriters have an option to purchase a maximum of additional shares of common stock from us. The underwriters can exercise thi option at any time within 30 days from the date of this prospectus.
Use of proceeds	We intend to use the net proceeds from this offering for general corporate purposes, including working capital, capital expenditures, further development and commercialization of our products, and sales and marketing activities. We may also use a portion of the net proceeds to expand our business through investments in other complementary strategic joint ventures, products, and technologies, although we have no agreements c commitments to do so as of the date of this prospectus.
Listing	We have applied for listing of our common stock on The NASDAQ Global Market under the symbol "RKDA."
Risk factors	Investing in our common stock involves a high degree of risk. You should carefully read and consider the information set forth under "Risk Factors" and all other information in this prospectus before investing in our common stock.

The number of shares of our common stock to be outstanding after this offering is based on 111,628,057 shares of our common stock outstanding as of September 30, 2014, and excludes:

- 14,571,883 shares of our common stock issuable upon exercise of stock options outstanding as of September 30, 2014 with a weighted-average exercise price of $0.72 per share under our 2006 Stock Plan;
- 500,000 shares of our common stock issuable upon exercise of stock options granted in October 2014 with an exercise price of $1.53 per share under our 2006 Stock Plan;
- 980,000 shares of our common stock issuable upon exercise of stock options granted in February 2015 with an exercise price of $1.80 per share under our 2006 Stock Plan;
- 5,347,591 shares of our common stock issuable upon the exercise of outstanding warrants to purchase common stock with a weighted-average exercis price of $4.49 per share; and
- shares of common stock reserved for future issuance under our equity-based compensation plans, consisting of shares of common stock reserved for issuance under our 2015 Omnibus Equity Incentive Plan and shares of common stock reserved for issuance under our 2015 Employee Stock Purchase Plan, and excluding shares that become available under the 2015 Omnibus Equity Incentive Plan and 2015 Employee Stock Purchase Plan pursuant to provisions of these plans that automatically increase the share reserves each year, as more fully described in "Executive Compensation—Employee Benefit Plans." The 2015

Omnibus Equity Incentive Plan and the 2015 Employee Stock Purchase Plan will become effective immediately prior to the effectiveness of the registration statement of which this prospectus forms a part.

Except as otherwise indicated, all information in this prospectus assumes:

- our reincorporation in Delaware prior to the completion of this offering;
- a one-for- reverse split of our common stock and a proportional adjustment to the conversion ratio of our preferred stock that will be effected prior to the completion of this offering;
- the automatic conversion of all outstanding shares of our preferred stock into an aggregate of 103,362,446 shares of common stock effective upon the closing of this offering, including the conversion of each share of our existing preferred stock (other than our Series D preferred stock) into one share c common stock and the conversion of all shares of our Series D preferred stock into 9,822,283 shares of common stock (or one share of common stock for each share of Series D preferred stock issued);
- our convertible noteholder will not convert any of the outstanding balance of its convertible promissory notes into shares of our common stock and wi not place any additional convertible debt with us;
- we will file our amended and restated certificate of incorporation and adopt our amended and restated bylaws immediately prior to the closing of this offering; and
- the underwriters will not exercise their option to purchase additional shares of common stock from us in this offering.

Summary Consolidated Financial Data

The following tables summarize our consolidated financial data and should be read together with our consolidated financial statements, the notes to our consolidated financial statements and "Management's Discussion and Analysis of Financial Condition and Results of Operations" contained elsewhere in this prospectus. We derived the summary consolidated statements of operations data for the years ended December 31, 2012 and 2013 from our audited consolidated financial statements included elsewhere in this prospectus. The summary consolidated statements of operations data for the nine months ended September 30, 2013 and 2014 and the consolidated balance sheet data as of September 30, 2014 are derived from our unaudited consolidated financial statements included elsewhere in this prospectus. Our unaudited interim consolidated financial statements were prepared on a basis consistent with our audited consolidated financial statements and have included, in our opinion, all adjustments, consisting only of normal recurring adjustments that we consider necessary for a fair presentation of the financial information set forth in those statements.

	Year Ended December 31,		Nine Months Ended September 30,	
	2012	2013	2013	2014
	(in thousands, except share and per share amounts)			
Consolidated Statements of Operations Data:				
Revenues:				
Product	$ 1,317	$ 1,102	$ 975	$ 266
License	2,526	1,625	626	462
Contract research and government grants	3,167	3,751	2,875	3,456
Total revenues	7,010	6,478	4,476	4,184
Operating expenses:				
Cost of product revenues(1)	909	673	586	1,932
Research and development(1)	7,948	8,404	6,219	7,942
Selling, general, and administrative(1)	8,283	7,967	5,970	7,833
Total operating expenses	17,140	17,044	12,775	17,707
Loss from operations	(10,130)	(10,566)	(8,299)	(13,523)
Interest expense	(186)	(626)	(358)	(1,048)
Other income (expense), net	8	5	5	(613)
Loss before income taxes and equity in loss of unconsolidated entity	(10,308)	(11,187)	(8,652)	(15,184)
Income tax provision	(213)	(167)	(131)	(235)
Equity in loss of unconsolidated entity	(1,849)	(1,841)	(1,539)	(932)
Net loss	(12,370)	(13,195)	(10,322)	(16,351)
Accretion of redeemable convertible preferred stock to redemption value	—	—	—	(2,088)
Net loss attributable to common stockholders	$ (12,370)	$ (13,195)	$ (10,322)	$ (18,439)
Net loss per share attributable to common stockholders, basic and diluted(2)	$ (1.51)	$ (1.61)	$ (1.26)	$ (2.24)
Weighted-average number of shares used in per share calculations, basic and diluted(2)	8,181,273	8,213,544	8,209,267	8,233,307
Pro forma net loss per share attributable to common stockholders, basic and diluted(2)		$ (0.13)		$
Weighted-average number of shares used in pro forma per share calculations, basic and diluted(2)		101,753,707		

(1) Includes stock-based compensation expense as follows:

	Year Ended December 31,		Nine Months Ended September 30,	
	2012	2013	2013	2014
	(in thousands)			
Research and development	$ 345	$ 414	$ 414	$ 152
Selling, general, and administrative	904	864	592	443
Total stock-based compensation	$ 1,249	$ 1,278	$ 1,006	$ 595

(2) See Note 13 of the notes to our consolidated financial statements for a description of how we compute net loss per share attributable to common stockholders, basic and diluted, and pro forma net loss per share attributable to common stockholders, basic and diluted.

	As of September 30, 2014		
	Actual	Pro Forma(1)	Pro Forma As Adjusted(2)(3)
		(in thousands)	
Consolidated Balance Sheet Data:			
Cash and cash equivalents	$ 21,170	$ 21,170	
Working capital	12,216	12,216	
Total assets	26,468	26,468	
Total indebtedness	14,536	14,536	
Redeemable convertible preferred stock	32,448	—	
Convertible preferred stock	48,783	—	
Additional paid-in capital	30,460	111,691	
Accumulated deficit	(111,982)	(111,982)	
Total stockholders' (deficit) equity	(81,522)	(291)	

(1) The pro forma column reflects the filing of our amended and restated certificate of incorporation and the automatic conversion of all outstanding shares of our preferred stock into an aggregate of shares of common stock upon the closing of this offering.

(2) The pro forma as adjusted column reflects the pro forma adjustments described in footnote (1) above and the sale by us of shares of common stock in this offering at an assumed initial public offering price of $ per share, which is the midpoint of the estimated offering price range set forth on the cover page of this prospectus, after deducting underwritin discounts and commissions and estimated offering expenses payable by us.

(3) Each $1.00 increase or decrease in the assumed initial public offering price of $ per share, which is the midpoint of the estimated offering price range set forth on the cover page of this prospectus, would increase or decrease, as applicable, cash and cash equivalents, working capital, total assets, additional paid-in capital, and total stockholders' (deficit) equity by $ million, assuming that the number of shares offered by us, as set forth on the cover page of this prospectus, remains the same, and after deducting estimated underwriting discounts and commissions. The pro forma as adjusted information presented in the consolidated balance sheet data is illustrative only and will change based on the actual initial public offering price and other terms of this offering determined at pricing.

RISK FACTORS

Investing in our common stock involves a substantial risk of loss. You should carefully consider the risks and uncertainties described below and the other information in this prospectus before deciding whether to purchase shares of our common stock. If any of the following risks actually occur, our business, financial condition, or operating results could be materially adversely affected. This could cause the trading price of our common stock to decline, and you may lose part or all of your investment. See the section entitled "Special Note Regarding Forward-Looking Statements" elsewhere in this prospectus.

Risks Related to our Business and our Industry

We or our collaborators may not be successful in developing commercial products that incorporate our traits.

Our future growth depends on our ability to identify genes that will improve selected crop traits and license these genes to our collaborators to develop and commercialize seeds that contain the genes. Our long-term growth strategy is based on our expectation that revenues related to the sale of seeds containing our traits will comprise a significant portion of our future revenues. Pursuant to our collaboration agreements, we are entitled to share in the revenues from the sale of products that integrate our trait. We expect that it will take several years before the first seeds integrating our agricultural productivity traits complete the development process and become commercially available for sale, resulting in revenues for us. However, the development process could take longer than we anticipate or could ultimately fail to succeed in commercialization for any of the following reasons:

- our traits may not be successfully validated in one or more target crops;
- our traits may not have the desired effect sought by our collaborators in the relevant crop or geography, or under certain environmental conditions;
- relevant milestones under our agreements with collaborators may not be achieved; and
- we or our collaborators may be unable to complete the regulatory process for the products containing our traits.

If products containing our traits are never commercialized, or are commercialized on a slower timeline than we anticipate, our ability to generate revenues and become profitable, as well as our long-term growth strategy, would be materially and adversely affected.

Even if we or our collaborators are successful in developing commercial products that incorporate our traits, such products may not achieve commercial success.

Our long-term growth strategy is dependent upon our or our collaborators' ability to incorporate our traits into a wide range of crops with global scope. Even if we or our collaborators are able to develop commercial products that incorporate our traits, any such products may not achieve commercial success as quickly as we project, or at all, for one or more of the following reasons, among others:

- products may fail to be effective in particular crops, geographies, or circumstances, limiting their commercialization potential;
- our competitors may launch competing or more effective traits or products;
- the market for abiotic seed traits is evolving and not well established, and the market opportunities for any product we or our collaborators develop may be smaller than we or our collaborators believe;

- as we do not have a sales or marketing infrastructure, we depend entirely on our collaborators to commercialize our products, and they may fail to devote the necessary resources and attention to sell, market, and distribute our current or any future products effectively;
- significant fluctuations in market prices for agricultural inputs and crops could have an adverse effect on the value of our traits;
- farmers are generally cautious in their adoption of new products and technologies, with conservative initial purchases and proof of product required prior to widespread deployment, and it may accordingly take several growing seasons for farmers to adopt our or our collaborators' products on a large scale;
- farmers may reuse certain non-hybrid GM seeds from prior growing seasons in violation of applicable seed license agreements;
- our collaborators may not be able to produce high-quality seeds in sufficient amounts to meet demand; and
- our collaborators may decide, for whatever reason, not to commercialize products containing our traits.

Our financial condition and results of operations could be materially and adversely affected if any of the above were to occur.

Our product development cycle is lengthy and uncertain, and we may never earn revenues from the sale of products containing our traits.

Research and development in the seed, agricultural biotechnology, and larger agriculture industries is expensive and prolonged and entails considerable uncertainty. We and our collaborators may spend many years and dedicate significant financial and other resources, including the proceeds of this offering, developing traits that will never be commercialized. The process of discovering, developing and commercializing a seed trait through either genetic modification or advanced breeding involves five phases, and it may require from six to thirteen years or more from discovery to commercialization. The length of the process may vary depending on one or more of the complexity of the trait, the particular crop, and the intended geographical market involved. This long product development cycle is in large part attributable to the nature-driven breeding period for a commercial product, as well as a lengthy regulatory process.

There are currently over 50 products in development incorporating our traits, each of which consists of the application of a specific seed trait to a specific crop. Although our Sonova products are on the market currently, we expect that it will take several years before the first products containing our agricultural productivity traits complete the development process and become commercially available. However, we have little to no certainty as to which, if any, of these products will eventually reach commercialization in this timeframe or at all. Because of the long product development cycle and the complexities and uncertainties associated with agricultural biotechnology research, there is significant uncertainty as to whether we will ever generate revenues from the sale of products containing one of our traits and, even if such products reach commercialization, any resulting revenues may come at a later time than we currently anticipate.

We have a history of significant losses, which we expect to continue, and we may never achieve or maintain profitability.

We have incurred significant net losses since our formation in 2002 and expect to continue to incur net losses for the foreseeable future. We incurred net losses of $12.4 million, $13.2 million, $10.3 million, and $16.4 million for the years ended December 31, 2012 and 2013 and the nine months

ended September 30, 2013 and 2014, respectively. As of September 30, 2014, we had an accumulated deficit of $112.0 million. We expect to continue to incur losses until we begin generating revenues from the sale of traits we are currently developing, which we expect will not occur for several years, if at all. Because we have incurred and will continue to incur significant costs and expenses for these efforts before we obtain any incremental revenues from the sale of seeds incorporating our traits, our losses in future periods could be even more significant. In addition, we may find our development efforts are more expensive than we anticipate or that they do not result in generating revenues in the time period we anticipate, which would further increase our losses. If we are unable to adequately control the costs associated with operating our business, including costs of development and commercialization of our traits, our business, financial condition, operating results, and prospects will suffer.

In addition, our ability to generate meaningful revenues and achieve and maintain profitability depends on our ability, alone or with strategic collaborators, to successfully complete the development of and complete the regulatory process to commercialize our traits. Most of our revenues since inception have consisted of upfront and milestone payments associated with our contract research and license agreements. Additional revenues from these agreements are largely dependent on successful development of our traits by us or our collaborators. To date, we have not generated any significant revenues from product sales other than from our Sonova products, and we do not otherwise anticipate generating revenues from product sales other than from sales of our Sonova products for the next several years. If products containing our traits fail to achieve market acceptance or generate significant revenues, we may never become profitable.

If ongoing or future field trials by us or our collaborators are unsuccessful, we may be unable to complete the regulatory process for, or commercialize, our products in development on a timely basis.

The successful completion of field trials in United States and foreign locations is critical to the success of product development and marketing efforts for products containing our traits. If our ongoing or future field trials, or those of our collaborators, are unsuccessful or produce inconsistent results or unanticipated adverse effects on crops or on non-target organisms, or if we or our collaborators are unable to collect reliable data, regulatory review of products in development containing our traits could be delayed or commercialization of products in development containing our traits may not be possible. In addition, more than one growing season may be required to collect sufficient data to develop or market a product containing our traits, and it may be necessary to collect data from different geographies to prove performance for customer adoption. Even in cases where field trials are successful, we cannot be certain that additional field trials conducted on a greater number of acres, or in different crops or geographies, will be successful. Generally, our collaborators conduct these field trials or we pay third parties, such as farmers, consultants, contractors, and universities, to conduct field trials on our behalf. Poor trial execution or data collection, failure to follow required agronomic practices, regulatory requirements, or mishandling of products in development by our collaborators or these third parties could impair the success of these field trials.

Many factors that may adversely affect the success of our field trials are beyond our control, including weather and climatic variations, such as drought or floods, severe heat or frost, hail, tornadoes and hurricanes, pests and diseases, or acts of protest or vandalism. For example, if there was prolonged or permanent disruption to the electricity, climate control, or water supply operating systems in our greenhouses or laboratories, the crops in which we or our collaborators are testing our traits and the samples we or our collaborators store in freezers, both of which are essential to our research and development activities, could be severely damaged or destroyed, adversely affecting these activities and thereby our business and results of operations. Unfavorable weather conditions can also reduce both acreage planted and incidence, or timing of, certain crop diseases or pest infestations, each of which may halt or delay our field trials. We have also experienced crop failures in the past for then-unknown reasons, causing delays in our achievement of milestones and delivery of results and necessitating that

we repeat the impacted field trials. Any field test failure we may experience may not be covered by insurance and, therefore, could result in increased cost for the field trials and development of our traits, which may negatively impact our business and results of operations. Additionally, we are subject to U.S. Department of Agriculture, or USDA, regulations, which may require us to abandon a field trial or to purchase and destroy neighboring crops that are planted after our field trials have commenced. For example, while conducting early field trials for GLA safflower oil, we were forced to purchase and destroy an adjacent safflower crop when the placement of bee hives by a third party altered the required isolation distance between our crop and the neighboring crop, requiring us to either purchase and destroy the adjacent crop or abandon our field trial. In order to prevent the significant delays that would result from terminating our field trial, we decided to purchase and destroy the neighboring crop at a cost of approximately $30,000. Similar factors outside of our control can create substantial volatility relating to our business and results of operations.

Competition in traits and seeds is intense and requires continuous technological development, and, if we are unable to compete effectively, our financial results will suffer.

We face significant competition in the markets in which we operate. The markets for traits and agricultural-biotechnology products are intensely competitive and rapidly changing. In most segments of the seed and agricultural biotechnology market, the number of products available to consumers is steadily increasing as new products are introduced. At the same time, the expiration of patents covering existing products reduces the barriers to entry for competitors. We may be unable to compete successfully against our current and future competitors, which may result in price reductions, reduced margins and the inability to achieve market acceptance for products containing our traits. In addition, several of our competitors have substantially greater financial, marketing, sales, distribution, research and development, and technical resources than us, and some of our collaborators have more experience in research and development, regulatory matters, manufacturing, and marketing. We anticipate increased competition in the future as new companies enter the market and new technologies become available. Our technologies may be rendered obsolete or uneconomical by technological advances or entirely different approaches developed by one or more of our competitors, which will prevent or limit our ability to generate revenues from the commercialization of our traits being developed.

We derive a significant portion of our current revenues from government agencies, which may not continue in the future and which may expose us to government audits and potential penalties.

We historically have derived a significant portion of our revenues from grants from U.S. government agencies. Such grants accounted for 34%, 44%, 49%, and 68% of our total revenue in the years ended December 31, 2012 and 2013 and the nine months ended September 30, 2013 and 2014, respectively. For example, revenues from the U.S. Agency for International Development accounted for 11%, 26%, 28%, and 49% of our total revenues in the years ended December 31, 2012 and 2013 and the nine months ended September 30, 2013 and 2014, respectively. Our ability to obtain grants is subject to the availability of funds under applicable government programs and approval of our applications to participate in such programs. The application process for these grants is highly competitive. We may not be successful in obtaining any additional grants. Once we successfully obtain a grant, the awarding U.S. government agency has the right to discontinue funding on such a grant at any time. The recent political focus on reducing spending at the U.S. federal and state levels may reduce the scope and amount of funds dedicated to seed and agricultural biotechnology innovations, if such funds continue to be available at all. To the extent that we are unsuccessful in obtaining any additional government grants in the future or if funding is discontinued on an existing grant, we would lose a significant source of our current revenues.

To the extent that we do not comply with the specific requirements of a grant, our expenses incurred may not be reimbursed and any of our existing grants or new grants that we may obtain in the

future may be terminated or modified. In addition, our activities funded by our government grants may be subject to audits by U.S. government agencies. As part of an audit, these agencies may review our performance, cost structures and compliance with applicable laws, regulations and standards, and the terms and conditions of the grant. An audit could result in a material adjustment to our results of operations and financial condition. Moreover, if an audit uncovers improper or illegal activities, we may also be subject to civil and criminal penalties and administrative sanctions, including termination of contracts, forfeiture of profits, suspension of payments, or fines, and we may be suspended or prohibited from doing business with the government. In addition, serious reputational harm or significant adverse financial effects could occur if allegations of impropriety are made against us, even if we are ultimately found to have done no wrong.

A significant portion of our revenues to date are from a limited number of strategic collaborations, and the termination of these collaborations would have a material adverse effect on our results of operations.

We derive a substantial amount of our revenues from a limited number of strategic collaborations, under which we generate revenues through licensing arrangements such as research and development payments, up-front payments, milestone payments, and, once a product is commercialized, a portion of the commercial value of the trait. In particular, revenues from Mahyco accounted for 34%, 23%, 12%, and 14% of our total revenues in the years ended December 31, 2012 and 2013 and the nine months ended September 30, 2013 and 2014, respectively. A small number of commercial partners are expected to continue to account for a substantial amount of our revenues for the next several years. Our agreements with Mahyco are terminable by Mahyco at will upon 90 days' notice. The termination or non-renewal of our arrangements with Mahyco or our other commercial partners would have a material adverse effect on our business, financial condition, results of operations, and prospects.

We expect to derive a substantial portion of our future revenues from commercial products sold outside the United States, which subjects us to additional business risks.

A significant number of our research and collaboration agreements include products under development for markets outside the United States. Our collaborators' operations in these regions are subject to a variety of risks, including different regulatory requirements, uncertainty of contract and intellectual property rights, unstable political and regulatory environments, economic and fiscal instability, tariffs and other import and trade restrictions, restrictions on the ability to repatriate funds, business cultures accepting of various levels of corruption, and the impact of anti-corruption laws. These risks could result in additional cost, loss of materials, and delays in our commercialization timeline in international markets and have a negative effect on our operating results.

Revenues generated outside the United States could also be subject to increased difficulty in collecting delinquent or unpaid accounts receivables, adverse tax consequences, currency and exchange rate fluctuations, relatively high inflation, exchange control regulations, and governmental pricing directives. Acts of terror or war may impair our ability to operate in particular countries or regions and may impede the flow of goods and services between countries. Customers in these and other markets may be unable to purchase our products if their economies deteriorate, or it could become more expensive for them to purchase imported products in their local currency or sell their commodities at prevailing international prices, and we may be unable to collect receivables from such customers. If any of these risks materialize, our results of operations and profitability could be harmed.

We or our collaborators may fail to perform our respective obligations under contract research and collaboration agreements.

We are obligated under certain contract research agreements to perform research activities over a particular period of time. If we fail to perform our obligations under these agreements, in some cases our collaborators may terminate our agreements with them and in other cases our collaborators'

obligations may be reduced and, as a result, our anticipated revenues may decrease. In addition, any of our collaborators may fail to perform their obligations under the diligence timelines in our collaboration agreements, which may delay development and commercialization of products containing our traits and materially and adversely affect our future results of operations.

Furthermore, the various payments we receive from our collaborators are a significant source of our current revenues and are expected to be the largest source of our revenues in the future. If our collaborators do not make these payments, either due to financial hardship, disagreement under the relevant collaboration agreement, or for any other reason, our results of operations and business could be materially and adversely affected. If disagreements with a collaborator arise, any dispute with such collaborator may negatively affect our relationship with one or more of our other collaborators and may hinder our ability to enter into future collaboration agreements, each of which could negatively impact our business and results of operations.

Most of our collaborators have significant resources and development capabilities and may develop their own products that compete with or negatively impact the advancement or sale of products containing our traits.

Most of our collaborators are significantly larger than us and may have substantially greater resources and development capabilities. As a result, we are subject to competition from many of our collaborators, who could develop or pursue competing products and traits that may ultimately prove more commercially viable than our traits. In addition, former collaborators, by virtue of having had access to our proprietary technology, may utilize this insight for their own development efforts, despite the fact that our collaboration agreements prohibit such use. The development or launch of a competing product by a collaborator may adversely affect the advancement and commercialization of any traits we develop and any associated research and development and milestone payments and value-sharing payments we receive from the sale of products containing our traits.

We rely on third parties to conduct, monitor, support and oversee field trials and, in some cases, to maintain regulatory files for those products in development, and any performance issues by third parties, or our inability to engage third parties on acceptable terms, may impact our or our collaborators' ability to complete the regulatory process for or commercialize such products.

We rely on third parties, including farmers, to conduct, monitor, support, and oversee field trials. As a result, we have less control over the timing and cost of these trials than if we conducted these trials with our own personnel. If we are unable to maintain or enter into agreements with these third parties on acceptable terms, or if any such engagement is terminated prematurely, we may be unable to conduct and complete our trials in the manner we anticipate. In addition, there is no guarantee that these third parties will devote adequate time and resources to our studies or perform as required by our contract or in accordance with regulatory requirements, including maintenance of field trial information regarding our products in development. If these third parties fail to meet expected deadlines, fail to transfer to us any regulatory information in a timely manner, fail to adhere to protocols, or fail to act in accordance with regulatory requirements or our agreements with them, or if they otherwise perform in a substandard manner or in a way that compromises the quality or accuracy of their activities or the data they obtain, then field trials of our products in development may be extended or delayed with additional costs incurred, or our data may be rejected by the USDA, the U.S. Food and Drug Administration, or FDA, the U.S. Environmental Protection Agency, or EPA, or other regulatory agencies. Ultimately, we are responsible for ensuring that each of our field trials is conducted in accordance with the applicable protocol, legal, regulatory and scientific standards, and our reliance on third parties does not relieve us of our responsibilities.

If our relationship with any of these third parties is terminated, we may be unable to enter into arrangements with alternative parties on commercially reasonable terms, or at all. Switching or adding farmers or other suppliers can involve substantial cost and require extensive management time and

focus. In addition, there is a natural transition period when a new farmer or third party commences work. As a result, delays may occur, which can materially impact our ability to meet our desired development timelines. If we are required to seek alternative supply arrangements, the resulting delays and potential inability to find a suitable replacement could materially and adversely impact our business.

Our prospects for successful development and commercialization of our products are dependent upon the research, development, commercialization, and marketing efforts of our collaborators.

We primarily rely on third parties for research, development, commercialization, and marketing of our products and products in development. Other than as provided for in our collaboration agreements, we have no control over the resources, time and effort that our collaborators may devote to the development of products incorporating our traits, and have limited access to information regarding or resulting from such programs. We are dependent on our third party collaborators to fund and conduct the research and development of product candidates, to complete the regulatory process, and for the successful marketing and commercialization of one or more of such products or products in development. Such success will be subject to significant uncertainty.

Our ability to recognize revenues from successful collaborations may be impaired by multiple factors including:

- a collaborator may shift its priorities and resources away from our programs due to a change in business strategies, or a merger, acquisition, sale, or downsizing of its company or business unit;
- a collaborator may cease development in a specific crop area that is the subject of a collaboration agreement;
- a collaborator may change the success criteria for a particular program or product in development, thereby delaying or ceasing development of such program or product in development;
- a significant delay in initiation of certain development activities by a collaborator will also delay payment of milestones tied to such activities, thereby impacting our ability to fund our own activities;
- a collaborator could develop or acquire a product that competes, either directly or indirectly, with our current products or any future products;
- a collaborator with commercialization obligations may not commit sufficient financial or human resources to the marketing, distribution, or sale of a product;
- a collaborator with manufacturing responsibilities may encounter regulatory, resource, or quality issues and be unable to meet demand requirements;
- a collaborator may exercise its rights under the agreement to terminate our collaboration;
- a dispute may arise between us and a collaborator concerning the development and commercialization of a product in development, resulting in a delay in milestones, royalty payments, or termination of a program and possibly resulting in costly litigation or arbitration that may divert management attention and resources;
- a collaborator may not adequately protect the intellectual property rights associated with a product or product in development; and
- a collaborator may use our proprietary information or intellectual property in such a way as to expose us to litigation from a third party.

If our collaborators do not perform in the manner we expect or fulfill their responsibilities in a timely manner, or at all, the development, regulatory, and commercialization process could be delayed, terminated, or otherwise unsuccessful. Conflicts between us and our collaborators may arise. In the event of termination of one or more of our collaboration agreements, it may become necessary for us to assume the responsibility for any terminated products or products in development at our own expense or seek new collaborators. In that event, we likely would be required to limit the size and scope of one or more of our independent programs or increase our expenditures and seek additional funding, which may not be available on acceptable terms or at all, and our business may be materially and adversely affected.

Our joint venture agreements could present a number of challenges that may have a material adverse effect on our business, financial condition, and results of operations.

We currently participate in two joint ventures, Limagrain Cereal Seeds LLC, which focuses on the development and commercialization of improved wheat seeds, and Verdeca LLC, which focuses on the development and deregulation of soybean traits, and we may enter into additional joint ventures in the future. Our joint venture arrangements may present financial, managerial, and operational challenges, including potential disputes, liabilities, or contingencies and may involve risks not otherwise present when operating independently, including:

- our joint venture partners may have business interests, goals, or cultures that are or become inconsistent with our business interests, goals, or culture;
- our joint venture partners may share certain approval rights, or in some cases, as with Limagrain Cereal Seeds LLC, have control over major decisions;
- our joint venture partners may not pay their share of the joint venture's obligations, potentially leaving us liable for their share of such obligations, or we may be unable to pay our share of the joint venture's obligations, which may result in a reduction of our ownership interest;
- we may incur liabilities or losses as a result of an action taken by the joint venture or our joint venture partners;
- our joint venture partners may take action contrary to our instructions, requests, policies, or objectives, which could reduce our return on investment, harm our reputation, or restrict our ability to run our business; and
- disputes between us and our joint venture partners may result in delays, litigation, or operational impasses.

The risks described above or the failure to continue any joint venture or joint development arrangement or to resolve disagreements with our current or future joint venture partners could materially and adversely affect our ability to transact the business that is the subject of such joint venture, which would in turn negatively affect our financial condition and results of operations.

We and our collaborators may disagree over our right to receive payments under our collaboration agreements, potentially resulting in costly litigation and loss of reputation.

Our ability to receive payments under our collaboration agreements depends on our ability to clearly delineate our rights under those agreements. We typically license our intellectual property to our collaborators, who then develop and commercialize seeds with improved traits. However, a collaborator may use our intellectual property without our permission, dispute our ownership of certain intellectual property rights, or argue that our intellectual property does not cover, or add value to, their marketed product. If a dispute arises, it may result in costly patent office procedures and litigation, and our collaborator may refuse to pay us while the dispute is ongoing. Furthermore, regardless of any resort to

legal action, a dispute with a collaborator over intellectual property rights may damage our relationship with that collaborator and may also harm our reputation in the industry.

Even if we are entitled to payments from our collaborators, we may not actually receive these payments, or we may experience difficulties in collecting the payments to which we believe we are entitled. After our collaborators launch commercial products containing our licensed traits, we will need to rely on the good faith of our collaborators to report to us the sales they earn from these products and to accurately calculate the payments we are entitled to, a process that will involve complicated and difficult calculations. Although we seek to address these concerns in our collaboration agreements by reserving our right to audit financial records, such provisions may not be effective.

Our business is subject to various government regulations and if we or our collaborators are unable to timely complete the regulatory process for our products in development, our or our collaborators' ability to market our traits could be delayed, prevented or limited.

Our business is generally subject to two types of regulations: regulations that apply to how we and our collaborators operate and regulations that apply to products containing our traits. We apply for and maintain the regulatory permits necessary for our operations, particularly those covering our field trials, while we or our collaborators apply for and maintain regulatory approvals necessary for the commercialization of products containing our seed traits. The large-scale field trials that our collaborators conduct during advanced stages of product development are subject to regulations similar to those to which we are subject. Pursuant to our collaboration agreements, our collaborators also apply for the requisite regulatory approvals prior to commercialization of products containing our traits. In most of our key target markets, regulatory approvals must be received prior to the importation of genetically modified products. These regulatory processes may be complex; for example, the U.S. federal government's regulation of biotechnology is divided among the EPA, which regulates activity related to the use of plant pesticides and herbicides, the USDA, which regulates the import, field testing and interstate movement of specific technologies that may be used in the creation of genetically modified plants, and the FDA, which regulates foods derived from new plant varieties. In addition to regulation by the U.S. government, products containing our biotech traits may be subject to regulation in each country in which such products are tested or sold. International regulations may vary from country to country and from those of the United States. The difference in regulations under U.S. law and the laws of foreign countries may be significant and, in order to comply with the laws of foreign countries, we may have to implement global changes to our products or business practices. Such changes may result in additional expense to us and either reduce or delay product development or sales. Additionally, we or our collaborators may be required to obtain certifications or approvals by foreign governments to test and sell the products in foreign countries.

The regulatory process is expensive and time-consuming, and the time required to complete the process is difficult to predict and depends upon numerous factors, including the substantial discretion of the regulatory authorities. Other than our Sonova products, neither we nor our collaborators have completed the regulatory process for any of our products in development. Our traits could require a significantly longer time to complete the regulatory process than expected, or may never gain approval, even if we and our collaborators expend substantial time and resources seeking such approval. A delay or denial of regulatory approval could delay or prevent our ability to generate revenues and to achieve profitability. For example, we are currently awaiting completion of the regulatory process for one of our Sonova products to be used in pet food, which has taken longer than expected. Changes in regulatory review policies during the development period of any of our traits, changes in, or the enactment of, additional regulations or statutes, or changes in regulatory review practices for a submitted product application may cause a delay in obtaining approval or result in the rejection of an application for regulatory approval. Regulatory approval, if obtained, may be made subject to limitations on the indicated uses for which we or our collaborators may market a product. These limitations could

adversely affect our potential revenues. Failure to comply with applicable regulatory requirements may, among other things, result in fines, suspensions of regulatory approvals, product recalls, product seizures, operating restrictions, and criminal prosecution. For example, we have on certain occasions notified the USDA of instances of noncompliance with regulations. Although these occasions did not result in any enforcement actions, we may have occasions of noncompliance in the future that result in USDA or other governmental agency enforcement action.

Consumer resistance to genetically modified organisms may negatively affect our public image and reduce sales of seeds containing our traits.

We are active in the field of agricultural biotechnology research and development in seeds and crop protection, including GM seeds. Foods made from such seeds are not accepted by many consumers due to concerns over such products' effects on food safety and the environment. The high public profile of biotechnology in food production and lack of consumer acceptance of products to which we have devoted substantial resources could negatively affect our public image and results of operations. The current resistance from consumer groups, particularly in Europe, to GM crops not only limits our access to such markets but also has the potential to spread to and influence the acceptance of products developed through biotechnology in other regions of the world. For example, in the United States, organizations have advocated for the labeling of food products containing GM ingredients, three states (Connecticut, Maine, and Vermont) have passed GM labeling legislation, and more than 20 states introduced legislation or ballot initiatives in 2014 that would require GM labeling. These labeling-related initiatives have heightened consumer awareness of GM crops generally and may make consumers less likely to purchase food products containing GM ingredients, which could have a negative impact on the commercial success of products that incorporate our traits and materially and adversely affect our financial condition and results of operations.

Governmental restrictions on the production of GM crops may negatively affect our business and results of operations.

The production of certain GM crops is effectively prohibited in certain countries, including throughout the European Union, which limits our commercial opportunities and may influence regulators in other countries to limit or ban production of GM crops. Our GM crops are grown principally in North America, South America, and Australia, where there are fewer restrictions on the production of GM crops. If these or other countries where our GM crops are grown enact laws or regulations that ban the production of such crops or make regulations more stringent, we could experience a longer product development cycle for our products, encounter difficulty obtaining intellectual property protection, and may even have to abandon projects related to certain crops or geographies, any of which would negatively affect our business and results of operations. Furthermore, any changes in such laws and regulations or consumer acceptance of our GM crops could negatively impact our collaborators, who in turn might terminate or reduce the scope of their collaborations with us or seek to alter the financial terms of our agreements with them.

Changes in laws and regulations to which we are subject, or to which we may become subject in the future, may materially increase our costs of operation, decrease our operating revenues, and disrupt our business.

Laws and regulatory standards and procedures that impact our business are continuously changing. Responding to these changes and meeting existing and new requirements may be costly and burdensome. Changes in laws and regulations could:

- impair or eliminate our ability, or increase our cost, to develop our traits, including validating our products in development through field trials;

- increase our compliance and other costs of doing business through increases in the cost to patent or otherwise protect our intellectual property or increases in the cost to our collaborators to complete the regulatory process to commercialize and market the products we develop with them;
- render any products less profitable, obsolete, or less attractive compared to competing products;
- affect our collaborators' willingness to do business with us;
- reduce the amount of revenues we receive from our collaborators; and
- discourage our collaborators from offering, and consumers from purchasing, products that incorporate our traits.

Any of these events could have a material adverse effect on our business, results of operations, and financial condition. Legislators and regulators have increased their focus on plant biotechnology in recent years, with particular attention paid to GM crops.

Our future growth relies on the ability of our collaborators to commercialize and market our products in development, and any restrictions on such activities could materially and adversely impact our business and results of operations. Any changes in regulations in countries where GM crops are grown or imported could result in our collaborators being unable or unwilling to develop, commercialize, or sell products that incorporate our traits. Any changes to these existing laws and regulations may also materially increase our costs of operation, decrease our operating revenues, and disrupt our business. See "Business—Regulatory Matters."

The unintended presence of our traits in other products or plants may negatively affect us.

Trace amounts of our traits may unintentionally be found outside our containment area in the products of third parties, which may result in negative publicity and claims of liability brought by such third parties against us. Furthermore, in the event of an unintended dissemination of our genetically engineered materials to the environment or the presence of unintended but unavoidable trace amounts, sometimes called "adventitious presence," of our traits in conventional seed, or in the grain or products produced from conventional or organic crops, we could be subject to claims by multiple parties, including environmental advocacy groups, as well as governmental actions such as mandated crop destruction, product recalls, or additional stewardship practices and environmental cleanup or monitoring.

Loss of or damage to our germplasm collection would significantly slow our product development efforts.

We have developed and maintain a comprehensive collection of germplasm through strategic collaborations with leading institutions, which we utilize in our non-GM programs. Germplasm comprises collections of genetic resources covering the diversity of a crop, the attributes of which are inherited from generation to generation. Germplasm is a key strategic asset since it forms the basis of seed development programs. To the extent that we lose access to such germplasm because of the termination or breach of our collaboration agreements, our product development capabilities would be severely limited. In addition, loss of or damage to these germplasm collections would significantly impair our research and development activities. Although we restrict access to our germplasm at our research facilities to protect this valuable resource, we cannot guarantee that our efforts to protect our germplasm collection will be successful. The destruction or theft of a significant portion of our germplasm collection would adversely affect our business and results of operations.

We depend on our key personnel and, if we are not able to attract and retain qualified scientific and business personnel, we may not be able to grow our business or develop and commercialize our products.

We depend heavily on the skills, expertise and legacy knowledge of principal members of our management, including Eric J. Rey, our President and Chief Executive Officer, and Vic C. Knauf, our Chief Scientific Officer, the loss of whose services might significantly delay or prevent the achievement of our scientific or business objectives.

Additionally, the vast majority of our workforce is involved in research, development, and regulatory activities. Our business is therefore dependent on our ability to recruit and maintain a highly skilled and educated workforce with expertise in a range of disciplines, including molecular biology, biochemistry, plant genetics, agronomics, mathematics, agribusiness, and other subjects relevant to our operations. All of our current employees are at-will employees, and the failure to retain or hire skilled and highly educated personnel could limit our growth and hinder our research and development efforts.

Many of our employees have become or will soon become vested in a substantial number of stock options. Our employees may be more likely to leave us if the shares they own or the shares underlying their vested options have significantly appreciated in value relative to the original purchase prices of the shares or the exercise prices of the options. Further, our employees' ability to exercise those options and sell their stock in a public market after the closing of this offering may result in a higher than normal turnover rate.

Our development activities are currently conducted at a limited number of locations, which makes us susceptible to damage or business disruptions caused by natural disasters.

Our headquarters, certain research and development operations and our seed storage warehouse are located in Davis, California. We also conduct certain research and development operations and store certain biomaterials in Seattle, Washington. The safflower grain used in the production of our Sonova products is grown in several locations throughout Idaho and is stored in a single facility in Idaho. Our production of our Sonova products takes place at a single facility in Northern California, and the inventory is stored in a single cold storage facility in Northern California. We take precautions to safeguard our facilities, including insurance, health and safety protocols, and off-site storage of critical research results and computer data. However, a natural disaster, such as a fire, flood, or earthquake, could cause substantial delays in our operations, damage or destroy our equipment, inventory, or development projects, and cause us to incur additional expenses. The insurance we maintain against natural disasters may not be adequate to cover our losses in any particular case.

Interruptions in the production or transportation of raw materials used in our Sonova products could adversely affect our operations and profitability.

The production of our Sonova products requires that sufficient quantities of certain raw materials, including our GLA safflower grain grown in Idaho, be timely delivered to our service provider's production facility in Northern California. Our dependency upon timely deliveries means that interruptions or stoppages in such deliveries, or delays or limitations with respect to the production of such raw materials, could adversely affect our operations until alternative arrangements could be made. If we were unable to obtain the necessary raw materials for an extended period of time for any reason, our business, customer relations, and operating results could suffer.

Disruption to our IT system could adversely affect our reputation and have a material adverse effect on our business and results of operations.

Our technologies rely on our IT system to collect and analyze our genomic data, including TILLING and other experimental data, and manage our plant inventory system, which tracks every plant that we have ever produced. We can provide no assurance that our current IT system is fully

protected against third-party intrusions, viruses, hacker attacks, information, or data theft, or other similar threats. Furthermore, we store significant amounts of data and though we are developing back-up storage for our stored data, we can not assure you that our back-up storage arrangements will be effective if it becomes necessary to rely on them.

If our IT system does not function properly or proves incompatible with new technologies, we could experience interruptions in data transmissions and slow response times, preventing us from completing routine research and business activities. Furthermore, disruption or failure of our IT system due to technical reasons, natural disaster, or other unanticipated catastrophic events, including power interruptions, storms, fires, floods, earthquakes, terrorist attacks, and wars could significantly impair our ability to deliver data related to our projects to our collaborators on schedule and materially and adversely affect the outcome of our collaborations, our relationships with our collaborators, our business, and our results of operations.

Our use of hazardous materials exposes us to potential liabilities.

Certain of our operations involve the storage and controlled use of hazardous materials, including herbicides and pesticides. This requires us to conduct our operations in compliance with applicable environmental and safety standards, and we cannot completely eliminate the risk of accidental contamination from hazardous materials. In the event of such contamination, we may be held liable for significant damages or fines, which could have a material adverse effect on our business and operating results.

Most of the licenses we grant to our collaborators to use our proprietary genes in certain crops are exclusive within certain jurisdictions, which limits our licensing opportunities.

Most of the licenses we grant our collaborators to use our proprietary genes in certain crops are exclusive within specified jurisdictions, so long as our collaborators comply with certain diligence requirements. That means that once genes are licensed to a collaborator in a specified crop or crops, we are generally prohibited from licensing those genes to any third party. The limitations imposed by these exclusive licenses could prevent us from expanding our business and increasing our exposure to new collaborators, both of which could adversely affect our business and results of operations.

Our business model for discovery of genes is dependent on licensing patent rights from third parties, and any disruption of this licensing process could adversely affect our competitive position and business prospects.

Our business model involves acquiring technologies that have achieved proof of concept through rigorous development and testing by third-party basic researchers in order to avoid the significant risks and high costs associated with basic research. Only a small number of the genes we evaluate for acquisition are likely to provide viable commercial candidates and an even more limited number, if any, are likely to be commercialized by us or our collaborators. A failure by us to continue identifying genes that improve specific crop traits could make it difficult to grow our business. If we are unable to identify additional genes, we may be unable to develop new traits, which may negatively impact our ability to generate revenues.

If we are unable to enter into licensing arrangements to acquire rights to these potentially viable genes on favorable terms in the future, it may adversely affect our business. In addition, if the owners of the patents we license do not properly maintain or enforce the patents underlying such licenses, our competitive position and business prospects could be harmed. Without protection for the intellectual property we license, other companies might be able to offer substantially similar or identical products for sale, which could adversely affect our competitive business position and harm our business prospects.

If we fail to comply with our obligations under license agreements, our counterparties may have the right to terminate these agreements, in which event we may not be able to develop, manufacture, register, or market, or may be forced to cease developing, manufacturing, registering, or marketing, any product that is covered by these agreements or may face other penalties under such agreements. Such an occurrence could materially adversely affect the value of the applicable products to us and have an adverse effect on our business and result of operations.

Our success depends on our ability to protect our intellectual property and our proprietary technologies.

Our commercial success depends, in part, on our ability to obtain and maintain patent and trade secret protection for our proprietary technologies, our traits, and their uses, as well as our ability to operate without infringing upon the proprietary rights of others. If we do not adequately protect our intellectual property, competitors may be able to use our technologies and erode or negate any competitive advantage we may have, which could harm our business and ability to achieve profitability.

If we are unable to protect the confidentiality of our trade secrets, the value of our technology could be materially and adversely affected and our business could be harmed.

We treat our proprietary technologies, including unpatented know-how and other proprietary information, as trade secrets. We seek to protect these trade secrets, in part, by entering into non-disclosure and confidentiality agreements with any third parties who have access to them, such as our consultants, independent contractors, advisors, corporate collaborators, and outside scientific collaborators. We also enter into confidentiality and invention or patent assignment agreements with employees and certain consultants. Any party with whom we have executed such an agreement could breach that agreement and disclose our proprietary information, including our trade secrets, and we may not be able to obtain adequate remedies for such breaches. Enforcing a claim that a party illegally disclosed or misappropriated a trade secret is difficult, expensive, and time consuming, and the outcome is unpredictable. In addition, if any of our trade secrets were to be lawfully obtained or independently developed by a competitor, we would have no right to prevent such third party, or those to whom they communicate such technology or information, from using that technology or information to compete with us. If any of our trade secrets were to be disclosed to or independently developed by a competitor, or if we otherwise lose protection for our trade secrets or proprietary know-how, the value of this information may be greatly reduced and our business and competitive position could be harmed.

Changes in U.S. patent law could diminish the value of patents in general, thereby impairing our ability to protect our products in development.

As an agricultural biotechnology company, our success is heavily dependent on intellectual property, particularly patents. Obtaining and enforcing patents involves technological and legal complexity, and is costly, time consuming, and inherently uncertain. In addition, the U.S. Supreme Court has ruled on several patent cases in recent years, either narrowing the scope of patent protection available in certain circumstances or weakening the rights of patent owners in certain situations. In addition to increasing uncertainty with regard to our ability to obtain patents in the future, this combination of events has created uncertainty with respect to the value of patents once obtained. Depending on decisions by the U.S. Congress, the federal courts, and the U.S. Patent and Trademark Office, the laws and regulations governing patents could change in unpredictable ways that may weaken or undermine our ability to obtain new patents or to enforce our existing patents and patents we might obtain in the future.

We may not be able to protect our intellectual property rights throughout the world.

Filing, prosecuting, maintaining, and defending patents on products in development in all countries throughout the world would be prohibitively expensive, and our intellectual property rights in some

countries outside the United States are less extensive than those in the United States. In addition, the laws of some foreign countries do not protect intellectual property rights to the same extent as federal and state laws in the United States. For example, several countries outside the United States prohibit patents on plants and seeds entirely. In addition, we may at times license third-party technologies for which limited international patent protection exists and for which the time period for filing international patent applications has passed. Consequently, we are unable to prevent third parties from using intellectual property we develop or license in all countries outside the United States, or from selling or importing products made using our intellectual property in and into the jurisdictions in which we do not have patent protection. Competitors may use our technologies in jurisdictions where we have not obtained patent protection to develop their own products, and we may be unable to prevent such competitors from importing those infringing products into territories where we have patent protection, but where enforcement is not as strong as in the United States. These products may compete with our products in development and our patents and other intellectual property rights may not be effective or sufficient to prevent them from competing in those jurisdictions. Moreover, farmers or others in the chain of commerce may raise legal challenges to our intellectual property rights or may infringe upon our intellectual property rights, including through means that may be difficult to prevent or detect, and local regulators may choose to not enforce our intellectual property rights.

Many companies have encountered significant problems in protecting and defending intellectual property rights in foreign jurisdictions where we have filed patent applications. The legal systems of certain countries have not historically favored the enforcement of patents or other intellectual property rights, which could hinder us from preventing the infringement of our patents or other intellectual property rights and result in substantial risks to us. Proceedings to enforce our patent rights in the United States or foreign jurisdictions could result in substantial costs and divert our efforts and attention from other aspects of our business, could put our patents at risk of being invalidated or interpreted narrowly and our patent applications at risk of not issuing and could provoke third parties to assert patent infringement or other claims against us. We may not prevail in any lawsuits that we initiate and the damages or other remedies awarded, if any, may not be commercially meaningful or even cover our associated legal costs. Accordingly, our efforts to enforce our intellectual property rights around the world may be inadequate to obtain a significant commercial advantage from the intellectual property that we develop or license from third parties.

If we or one of our collaborators are sued for infringing the intellectual property rights of a third party, such litigation could be costly and time consuming and could prevent us or our collaborators from developing or commercializing our products.

Our ability to generate significant revenues from our products depends on our and our collaborators' ability to develop, market and sell our products and utilize our proprietary technology without infringing the intellectual property and other rights of any third parties. In the United States and abroad there are numerous third-party patents and patent applications that may be applied toward our proprietary technology, business processes, or developed traits, some of which may be construed as containing claims that cover the subject matter of our products or intellectual property. Because of the rapid pace of technological change, the confidentiality of patent applications in some jurisdictions (including U.S. provisional patent applications), and the fact that patent applications can take many years to issue, there may be currently pending applications that are unknown to us that may later result in issued patents upon which our products in development or proprietary technologies infringe. Similarly, there may be issued patents relevant to our products in development of which we are not aware. These patents could reduce the value of the traits we develop or the genetically modified plants containing our traits or, to the extent they cover key technologies on which we have unknowingly relied, require that we seek to obtain licenses or cease using the technology, no matter how valuable to our business. We may not be able to obtain such a license on commercially reasonable terms. If any third party patent or patent application covers our intellectual property or proprietary rights and we are not

able to obtain a license to it, we and our collaborators may be prevented from commercializing products containing our traits.

As the agricultural biotechnology industry continues to develop, we may become party to, or threatened with, litigation or other adverse proceedings regarding intellectual property or proprietary rights in our technology, processes, or developed traits. Third parties may assert claims based on existing or future intellectual property rights and the outcome of any proceedings is subject to uncertainties that cannot be adequately quantified in advance. Any litigation proceedings could be costly and time consuming, and negative outcomes could result in liability for monetary damages, including treble damages and attorneys' fees, if we are found to have willfully infringed a patent. There is also no guarantee that we would be able to obtain a license under such infringed intellectual property on commercially reasonable terms or at all. A finding of infringement could prevent us or our collaborators from developing, marketing or selling a product or force us to cease some or all of our business operations. Even if we are successful in these proceedings, we may incur substantial costs and the time and attention of our management and scientific personnel may be diverted as a result of these proceedings, which could have a material adverse effect on us. Claims that we have misappropriated the confidential information or trade secrets of third parties could similarly have a negative impact on our business.

Our results of operations will be affected by the level of royalty payments that we are required to pay to third parties.

We are a party to license agreements that require us to remit royalty payments and other payments related to in-licensed intellectual property. Under our in-license agreements, we may pay up-front fees and milestone payments and be subject to future royalties. We cannot precisely predict the amount, if any, of royalties we will owe in the future, and if our calculations of royalty payments are incorrect, we may owe additional royalties, which could negatively affect our results of operations. As our product sales increase, we may, from time to time, disagree with our third-party collaborators as to the appropriate royalties owed and the resolution of such disputes may be costly and may consume management's time. Furthermore, we may enter into additional license agreements in the future, which may also include royalty, milestone and other payments.

We are subject to governmental export and import controls that could impair our ability to compete in international markets due to licensing requirements and subject us to liability if we are not in compliance with applicable laws.

Our products and products in development are subject to export control and import laws and regulations, including the U.S. Export Administration Regulations, U.S. Customs regulations, and various economic and trade sanctions regulations administered by the U.S. Treasury Department's Office of Foreign Assets Controls. Exports of our products and technology must be made in compliance with these laws and regulations. If we fail to comply with these laws and regulations, we and certain of our employees could be subject to substantial civil or criminal penalties, including the possible loss of export or import privileges; fines, which may be imposed on us and responsible employees or managers; and, in extreme cases, the incarceration of responsible employees or managers.

In addition, changes in our products or solutions or changes in applicable export or import laws and regulations may create delays in the introduction and sale of our products and solutions in international markets, prevent our customers from deploying our products and solutions or, in some cases, prevent the export or import of our products and solutions to certain countries, governments or persons altogether. Any change in export or import laws and regulations, shift in the enforcement or scope of existing laws and regulations, or change in the countries, governments, persons or technologies targeted by such laws and regulations, could also result in decreased use of our products and solutions, or in our decreased ability to export or sell our products and solutions to existing or potential

customers. Any decreased use of our products and solutions or limitation on our ability to export or sell our products and solutions would likely adversely affect our business, financial condition and results of operations.

We are subject to anti-corruption and anti-money laundering laws with respect to both our domestic and international operations and non-compliance with such laws can subject us to criminal and civil liability and harm our business.

We are subject to the U.S. Foreign Corrupt Practices Act of 1977, as amended, or the FCPA, the U.S. domestic bribery statute contained in 18 U.S.C. § 201, the U.S. Travel Act, the USA PATRIOT Act, and possibly other anti-bribery and anti-money laundering laws in countries in which we conduct activities. Anti-corruption laws are interpreted broadly and prohibit us and our collaborators from authorizing, offering, or providing directly or indirectly improper payments or benefits to recipients in the public or private sector. We or our collaborators may have direct and indirect interactions with government agencies and state-affiliated entities and universities in the course of our business. We may also have certain matters come before public international organizations such as the United Nations. We use third-party collaborators, joint venture and strategic partners, law firms, and other representatives for regulatory compliance, patent registration, lobbying, deregulation advocacy, field testing, and other purposes in a variety of countries, including those that are known to present a high corruption risk such as India, China, and Latin American countries. We can be held liable for the corrupt or other illegal activities of these third-party collaborators, our employees, representatives, contractors, partners, and agents, even if we do not explicitly authorize such activities. In addition, although we have implemented policies and procedures to ensure compliance with anti-corruption and related laws, there can be no assurance that all of our employees, representatives, contractors, partners, or agents will comply with these laws at all times. Noncompliance with these laws could subject us to whistleblower complaints, investigations, sanctions, settlements, prosecution, other enforcement actions, disgorgement of profits, significant fines, damages, other civil and criminal penalties or injunctions, suspension and debarment from contracting with certain governments or other persons, the loss of export privileges, reputational harm, adverse media coverage, and other collateral consequences. If any subpoenas or investigations are launched, or governmental or other sanctions are imposed, or if we do not prevail in any possible civil or criminal litigation, our business, results of operations and financial condition could be materially harmed. In addition, responding to any action will likely result in a materially significant diversion of management's attention and resources and significant defense costs and other professional fees. Enforcement actions and sanctions could further harm our business, results of operations, and financial condition.

We may require additional financing in the future and may not be able to obtain such financing on favorable terms, if at all, which could force us to delay, reduce or eliminate our research and development activities.

We will continue to need capital to fund our research and development projects and to provide working capital to fund other aspects of our business. If our capital resources are insufficient to meet our capital requirements, we will have to raise additional funds. If future financings involve the issuance of equity securities, our existing stockholders would suffer dilution. If we are able to raise additional debt financing, which will require the consent of our current debt holders, we may be subject to additional restrictive covenants that limit our operating flexibility. We may not be able to raise sufficient additional funds on terms that are favorable to us, if at all. If we fail to raise sufficient funds and continue to incur losses, our ability to fund our operations, take advantage of strategic opportunities, develop and commercialize products or technologies, or otherwise respond to competitive pressures could be significantly limited. If this happens, we may be forced to delay or terminate research and development programs or the commercialization of products or curtail operations. If adequate funds are not available, we will not be able to successfully execute on our business strategy or continue our business.

Adverse outcomes in future legal proceedings could subject us to substantial damages and adversely affect our results of operations and profitability.

We may become party to legal proceedings, including matters involving personnel and employment issues, personal injury, environmental matters, and other proceedings. Some of these potential proceedings could result in substantial damages or payment awards that exceed our insurance coverage. We will estimate our exposure to any future legal proceedings and establish provisions for the estimated liabilities where it is reasonably possible to estimate and where an adverse outcome is probable. Assessing and predicting the outcome of these matters will involve substantial uncertainties. Furthermore, even if the outcome is ultimately in our favor, our costs associated with such litigation may be material. Adverse outcomes in future legal proceedings or the costs and expenses associated therewith could have an adverse effect on our results of operations.

We may be required to pay substantial damages as a result of product liability claims for which insurance coverage is not available.

We are subject to product liability claims with respect to our Sonova products, and as additional products integrating our traits reach commercialization, product liability claims will increasingly be a commercial risk for our business, particularly as we are involved in the supply of biotechnological products, some of which may be harmful to humans and the environment. Product liability claims against us or our collaborators selling products that contain our traits, or allegations of product liability relating to seeds containing traits developed by us, could damage our reputation, harm our relationships with our collaborators, and materially and adversely affect our business, results of operations, financial condition, and prospects. Furthermore, while our collaboration agreements typically require that our collaborators indemnify us for the cost of product liability claims brought against us as a result of our collaborator's misconduct, such indemnification provisions may not always be enforced, and we may receive no indemnification if our own misconduct contributed to the claims.

We may seek to expand through acquisitions of and investments in other brands, businesses, and assets. These acquisition activities may be unsuccessful or divert management's attention.

We may consider strategic and complementary acquisitions of and investments in other agricultural biotechnology brands, businesses or other assets, and such acquisitions or investments are subject to risks that could affect our business, including risks related to:

- the necessity of coordinating geographically disparate organizations;
- implementing common systems and controls;
- integrating personnel with diverse business and cultural backgrounds;
- integrating acquired manufacturing and production facilities, technology and products;
- combining different corporate cultures and legal systems;
- unanticipated expenses related to integration, including technical and operational integration;
- increased costs and unanticipated liabilities, including with respect to registration, environmental, health and safety matters, that may affect sales and operating results;
- retaining key employees;
- obtaining required government and third-party approvals;
- legal limitations in new jurisdictions;
- installing effective internal controls and audit procedures;

- issuing common stock that could dilute the interests of our existing stockholders;
- spending cash and incurring debt;
- assuming contingent liabilities; and
- creating additional expenses.

We may not be able to identify opportunities or complete transactions on commercially reasonable terms, or at all, or actually realize any anticipated benefits from such acquisitions or investments. Similarly, we may not be able to obtain financing for acquisitions or investments on attractive terms. In addition, the success of any acquisitions or investments also will depend, in part, on our ability to integrate the acquisition or investment with our existing operations.

We will incur significantly increased costs and devote substantial management time as a result of operating as a public company.

As a public company, we will incur significant legal, accounting, and other expenses that we did not incur as a private company. For example, we will be subject to the reporting requirements of the Securities Exchange Act of 1934, as amended, or the Exchange Act, and will be required to comply with the applicable requirements of the Sarbanes-Oxley Act and the Dodd-Frank Wall Street Reform and Consumer Protection Act, as well as rules and regulations subsequently implemented by the SEC and The NASDAQ Stock Market, including the establishment and maintenance of effective disclosure and financial controls and changes in corporate governance practices. We expect that compliance with these requirements will increase our legal and financial compliance costs and will make some activities more time consuming and costly. In addition, we expect that our management and other personnel will need to divert attention from operational and other business matters to devote substantial time to these public company requirements. In particular, we expect to incur significant expenses and devote substantial management effort toward ensuring compliance with the requirements of Section 404 of the Sarbanes-Oxley Act, which will increase when we are no longer an emerging growth company, as defined by the JOBS Act. We will need to hire additional accounting and financial staff with appropriate public company experience and technical accounting knowledge and may need to establish an internal audit function. We cannot predict or estimate the amount of additional costs we may incur as a result of becoming a public company or the timing of such costs. We also expect that operating as a public company will make it more expensive for us to obtain director and officer liability insurance on the terms that we would like. As a public company, it may be more difficult for us to attract and retain qualified people to serve on our board of directors, our board committees, or as executive officers.

Our ability to use our net operating loss carryforwards to offset future taxable income may be subject to certain limitations.

As of December 31, 2013, we had net operating loss carryforwards, or NOLs, for federal income tax reporting purposes of $77.6 million, which begin to expire in 2020, and state NOLs of $72.0 million, which begin to expire in 2014. In general, under Section 382 of the Internal Revenue Code of 1986, as amended, or the Code, a corporation that undergoes an "ownership change" is subject to limitations on its ability to utilize its NOLs to offset future taxable income. Our existing NOLs may be subject to limitations arising from previous ownership changes, and if we undergo an ownership change in connection with or after this offering, our ability to utilize NOLs could be further limited by Section 382 of the Code. Future changes in our stock ownership, some of which are outside of our control, could result in an ownership change under Section 382 of the Code. Furthermore, our ability to utilize NOLs of companies that we may acquire in the future may be subject to limitations. There is also a risk that, due to regulatory changes, such as suspensions on the use of NOLs, or other unforeseen reasons, our existing NOLs could expire or otherwise be unavailable to offset future income

tax liabilities. For these reasons, we may not be able to realize a tax benefit from the use of our NOLs, whether or not we obtain profitability.

We expect our operating results to vary significantly from quarter to quarter, which may cause our stock price to fluctuate widely.

We expect our quarterly operating results to fluctuate widely and unpredictably for the following reasons, among others:

- our significant customer concentration;
- our uncertain ability to obtain government grant funding, which affects the timing and amounts of our payments from the U.S. government;
- the greatly varying timing, stage, and results of our and our collaborators' research, development, and regulatory activities;
- the impact of seasonality in agricultural operations on our field trials and sales of products that incorporate our seed traits;
- supplier, manufacturing, or quality problems; and
- variance in the timing of customer and distributor orders for our Sonova products.

Further, a large proportion of our costs are fixed, due in part to our significant research and development costs and general and administrative expenses. Thus, even a small decline in revenues could disproportionately affect our quarterly operating results and could cause such results to differ materially from expectations. Any unanticipated change in revenues or operating results is likely to cause our stock price to fluctuate since such changes reflect new information available to investors and analysts.

The estimates of market opportunity and forecasts of market growth included in this prospectus may prove to be inaccurate, and even if the market in which we compete achieves the forecasted growth, our business could fail to grow at similar rates, if at all.

Market opportunity estimates and growth forecasts are subject to significant uncertainty and are based on assumptions and estimates that may not prove to be accurate. The estimates and forecasts in this prospectus relating to the size and expected growth of the seed and agricultural biotechnology market may prove to be inaccurate. Even if the market in which we compete meets our size estimates and forecasted growth, our business could fail to grow at similar rates, if at all. For more information regarding our estimates of market opportunity and the forecasts of market growth included in this prospectus, see "Industry Overview."

Risks Related to Our Common Stock and this Offering

An active, liquid and orderly trading market for our common stock may not develop, our stock price may be volatile, and you may be unable to sell your shares at or above the offering price you paid.

Prior to this offering, there has not been a public market for our common stock. We cannot predict the extent to which a trading market will develop or how liquid that market might become. The initial public offering price for our common stock will be determined by negotiations between us and representatives of the underwriters and may not be indicative of prices that will prevail in the trading market after the offering closes. The market price of our common stock could be subject to wide fluctuations in response to many risk factors listed in this section and others beyond our control, including:

- addition or loss of significant customers, collaborators, or distributors;

- changes in laws or regulations applicable to our industry or traits;
- additions or departures of key personnel;
- the failure of securities analysts to cover our common stock after this offering;
- actual or anticipated changes in expectations regarding our performance by investors or securities analysts;
- price and volume fluctuations in the overall stock market;
- volatility in the market price and trading volume of companies in our industry or companies that investors consider comparable;
- share price and volume fluctuations attributable to inconsistent trading volume levels of our shares;
- our ability to protect our intellectual property and other proprietary rights;
- sales of our common stock by us or our stockholders;
- the expiration of contractual lock-up agreements;
- litigation involving us, our industry, or both;
- major catastrophic events; and
- general economic and market conditions and trends.

Further, the stock markets have experienced extreme price and volume fluctuations that have affected and continue to affect the market prices of equity securities of many companies. These fluctuations often have been unrelated or disproportionate to the operating performance of those companies. In addition, the stock prices of many seed and agricultural biotechnology companies have experienced wide fluctuations that have often been unrelated to the operating performance of those companies. These broad market and industry fluctuations, as well as general economic, political and market conditions such as recessions, interest rate changes or international currency fluctuations, may cause the market price of our common stock to decline. If the market price of our common stock after this offering does not exceed the initial public offering price, you may not realize any return on your investment and may lose some or all of your investment.

As a result of becoming a public company, we will be obligated to develop and maintain proper and effective internal control over financial reporting. We may not complete our analysis of our internal control over financial reporting in a timely manner, or these internal controls may not be determined to be effective, which may adversely affect investor confidence in our company and, as a result, the value of our common stock.

Pursuant to Section 404 of the Sarbanes-Oxley Act and the related rules adopted by the SEC and the Public Company Accounting Oversight Board, starting with the second annual report that we file with the SEC after the consummation of this offering, our management will be required to report on the effectiveness of our internal control over financial reporting. In addition, once we no longer qualify as an emerging growth company under the JOBS Act and lose the ability to rely on the exemptions related thereto, our independent registered public accounting firm will also need to attest to the effectiveness of our internal control over financial reporting under Section 404. We have not yet commenced the process of determining whether our existing internal controls over financial reporting systems are compliant with Section 404. This process will require the investment of substantial time and resources, including by members of our senior management. As a result, this process may divert internal resources and take a significant amount of time and effort to complete. In addition, we cannot predict the outcome of this determination and whether we will need to implement remedial actions in order to implement effective internal control over financial reporting.

In connection with our preparation of our financial statements for the year ended December 31, 2013, which were issued in November 2014, we identified two control deficiencies that did not rise to the level of a material weakness, on an individual basis or in the aggregate, but did represent significant deficiencies in our internal control over financial reporting. A control deficiency is considered a significant deficiency if it represents a deficiency, or a combination of deficiencies, in internal control over financial reporting that is less severe than a material weakness, yet important enough to merit attention by those responsible for oversight of a company's financial reporting. The two significant deficiencies related to our information technology access controls and the timeliness of our accounting and disclosure procedures. The determination and any remedial actions required could result in us incurring additional costs that we did not anticipate. Irrespective of compliance with Section 404, any failure of our internal controls could have a material adverse effect on our stated results of operations and harm our reputation. As a result, we may experience higher than anticipated operating expenses, as well as higher auditor fees during and after the implementation of these changes. If we are unable to implement any of the required changes to our internal control over financial reporting effectively or efficiently or are required to do so earlier than anticipated, it could adversely affect our operations, financial reporting, and results of operations and could result in an adverse opinion on internal controls from our independent registered public accounting firm.

Our stock price could decline due to the large number of outstanding shares of our common stock eligible for future sale.

Sales of substantial amounts of our common stock in the public market following this offering, or the perception that these sales could occur, could cause the market price of our common stock to decline. These sales could also make it more difficult for us to sell equity or equity-related securities in the future at a time and price that we deem appropriate.

Upon completion of this offering, we will have outstanding shares of common stock based on the number of shares outstanding as of and assuming no exercise of the underwriters' option to purchase additional shares and no exercise of outstanding options after . The shares sold pursuant to this offering will be immediately tradable without restriction, excluding any shares sold under our reserved share program or to our directors or officers, which shares will become saleable beginning 181 days after the date of this prospectus. Of the remaining shares:

- no shares will be eligible for sale immediately upon completion of this offering; and
- shares will become eligible for sale, subject to the provisions of Rule 144 or Rule 701, upon the expiration of agreements not to sell such shares entered into between the underwriters and such stockholders beginning 181 days after the date of this prospectus.

We and all of our directors and officers and substantially all of our security holders have agreed that, subject to certain exceptions, we and they will not, without the prior written consent of Credit Suisse Securities (USA) LLC and J.P. Morgan Securities LLC, on behalf of the underwriters, during the period ending 180 days after the date of this prospectus:

- offer, pledge, sell, contract to sell, sell any option or contract to purchase, purchase any option or contract to sell, grant any option, right or warrant to purchase, lend, or otherwise transfer or dispose of, directly or indirectly, any shares of our common stock or securities convertible into or exercisable or exchangeable for our common stock; or
- enter into any swap or other arrangement that transfers to another, in whole or in part, any of the economic consequences of ownership of our common stock;

whether any transaction described above is to be settled by delivery of shares of our common stock or such other securities, in cash or otherwise. See "Underwriting."

Credit Suisse Securities (USA) LLC and J.P. Morgan Securities LLC, on behalf of the underwriters, may, in their sole discretion and at any time, release all or any portion of the securities subject to lock-up agreement. After the closing of this offering, we intend to register approximately shares of common stock that have been reserved for future issuance under our stock incentive plans.

Insiders will continue to have substantial control over us after this offering, which could limit your ability to influence the outcome of key transactions, including a change of control.

Our directors, executive officers and each of our stockholders who own greater than 5% of our outstanding common stock and their affiliates, in the aggregate, will beneficially own approximately % of the outstanding shares of our common stock after this offering. As a result, these stockholders, if acting together, would be able to influence or control matters requiring approval by our stockholders, including the election of directors and the approval of mergers, acquisitions or other extraordinary transactions. They may have interests that differ from yours and may vote in a way with which you disagree and that may be adverse to your interests. This concentration of ownership may have the effect of delaying, preventing or deterring a change of control of our company, could deprive our stockholders of an opportunity to receive a premium for their common stock as part of a sale of our company and might affect the market price of our common stock.

Immediately following this offering, Moral Compass Corporation, our largest stockholder, will beneficially own approximately % of our outstanding common stock assuming no exercise of the underwriters' option to purchase additional shares and approximately % assuming full exercise of the underwriters' option to purchase additional shares. For so long as Moral Compass Corporation continues to own a significant percentage of our outstanding shares they will be able to significantly influence the composition of our board of directors and the approval of actions requiring stockholder approval. Accordingly, for such period of time, Moral Compass Corporation may be able to exercise control over our management, business plans, and policies, including the appointment and removal of our officers, and may be able to cause or prevent a change of control of our company or a change in the composition of our board of directors and could preclude any unsolicited acquisition of our company. This concentration of ownership could deprive you of an opportunity to receive a premium for your shares as part of a sale of our company and ultimately might affect the market price of our common stock.

Our management will have broad discretion over the use of the proceeds from this offering and may not apply the proceeds of this offering in ways that increase the value of your investment.

Our management will have broad discretion to use the net proceeds we receive from this offering and you will be relying on its judgment regarding the application of these proceeds. We expect to use the net proceeds from this offering as described under the heading "Use of Proceeds." However, management may not apply the net proceeds of this offering in ways that increase the value of your investment.

If you purchase shares of our common stock in this offering, you will experience substantial and immediate dilution.

If you purchase shares of our common stock in this offering, you will experience substantial and immediate dilution of $ per share, because the price that you pay will be substantially greater than the net tangible book value per share of the common stock that you acquire. This dilution is due in large part because our earlier investors paid substantially less than the initial public offering price when they purchased their shares of our capital stock. You will experience additional dilution upon the exercise of options to purchase common stock under our equity incentive plans, if we issue restricted

stock to our employees under these plans, or if we otherwise issue additional shares of our common stock. See "Dilution."

Provisions in our amended and restated certificate of incorporation and amended and restated bylaws and under Delaware law might discourage, delay or prevent a change of control of our company or changes in our management and, therefore, depress the trading price of our common stock.

Our amended and restated certificate of incorporation and amended and restated bylaws contain provisions that could depress the trading price of our common stock by discouraging, delaying or preventing a change of control of our company or changes in our management that the stockholders of our company may believe advantageous. These provisions include:

- establishing a classified board of directors so that not all members of our board of directors are elected at one time;
- authorizing "blank check" preferred stock that our board of directors could issue to increase the number of outstanding shares to discourage a takeover attempt;
- limiting the ability of stockholders to call a special stockholder meeting;
- limiting the ability of stockholders to act by written consent;
- the requirement that, to the fullest extent permitted by law and unless we consent to an alternate form, certain proceedings against or involving us or our directors, officers, or employees be brought exclusively in the Court of Chancery in the State of Delaware;
- providing that the board of directors is expressly authorized to make, alter, or repeal our bylaws; and
- establishing advance notice requirements for nominations for elections to our board of directors or for proposing matters that can be acted upon by stockholders at stockholder meetings.

If securities or industry analysts do not publish or cease publishing research or reports about us, our business, or our market, or if they change their recommendations regarding our stock adversely, our stock price and trading volume could decline.

The trading market for our common stock will be influenced by the research and reports that industry or securities analysts may publish about us, our business, our market or our competitors. If any of the analysts who may cover us make adverse changes to their recommendation regarding our stock, or provide more favorable relative recommendations about our competitors, our stock price would likely decline. If any analyst who may cover us were to cease coverage of our company or fail to regularly publish reports on us, we could lose visibility in the financial markets, which in turn could cause our stock price or trading volume to decline.

As an emerging growth company within the meaning of the Securities Act, we will utilize certain modified disclosure requirements, and we cannot be certain if these reduced requirements will make our common stock less attractive to investors.

We are an emerging growth company within the meaning of the rules under the Securities Act of 1933, as amended, or the Securities Act. We have in this prospectus utilized, and we plan in future filings with the SEC to continue to utilize, the modified disclosure requirements available to emerging growth companies, including reduced disclosure about our executive compensation and omission of compensation discussion and analysis, and an exemption from the requirement of holding a nonbinding advisory vote on executive compensation. In addition, we will not be subject to certain requirements of Section 404 of the Sarbanes-Oxley Act, including the additional testing of our internal control over financial reporting as may occur when outside auditors attest as to our internal control over financial

reporting. As a result, our stockholders may not have access to certain information they may deem important. We cannot predict if investors will find our common stock less attractive because we will rely on these exemptions. If some investors find our common stock less attractive as a result, there may be a less active trading market for our common stock and our stock price may be more volatile.

We could remain an emerging growth company for up to five years, or until the earliest of (i) the last day of the first fiscal year in which our annual gross revenues exceed $1.0 billion, (ii) the date that we become a large accelerated filer as defined in Rule 12b-2 under the Exchange Act, which would occur if the market value of our common stock that is held by non-affiliates exceeds $700 million as of the last business day of our most recently completed second fiscal quarter, or (iii) the date on which we have issued more than $1.0 billion in non-convertible debt during the preceding three-year period.

Because we do not expect to pay any dividends for the foreseeable future, investors in this offering may be forced to sell their stock to realize a return on their investment.

We do not anticipate that we will pay any dividends to holders of our common stock for the foreseeable future. Any payment of cash dividends will be at the discretion of our board of directors and will depend on, among other things, our results of operations, cash requirements, financial condition, contractual restrictions including compliance with covenants under our debt agreements, and other factors that our board of directors may deem relevant. Our ability to pay dividends might be restricted by the terms of any indebtedness that we incur in the future. In addition, certain of our current outstanding debt agreements prohibit us from paying cash dividends on our common stock. Consequently, you should not rely on dividends to receive a return on your investment. See "Dividend Policy."

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus contains forward-looking statements within the meaning of the federal securities laws, which statements involve substantial risks and uncertainties. Forward-looking statements generally relate to future events, our future financial or operating performance, growth strategies, anticipated trends in our industry, and our potential opportunities, plans, and objectives. In some cases, you can identify forward-looking statements because they contain words such as "may," "will," "should," "expects," "plans," "anticipates," "could," "intends," "target," "projects," "contemplates," "believes," "estimates," "predicts," "potential," or "continue" or the negative of these words or other similar terms or expressions that concern our expectations, strategy, plans, or intentions. Forward-looking statements contained in this prospectus include, but are not limited to, statements about:

- our or our collaborators' ability to develop commercial products that incorporate our traits and complete the regulatory process for such products;
- our ability to earn revenues from the sale of products that incorporate our traits;
- our ability to maintain our strategic collaborations and joint ventures and enter into new arrangements;
- market conditions for products, including competitive factors and the supply and pricing of competing products;
- compliance with laws and regulations that impact our business, and changes to such laws and regulations;
- our ability to license patent rights from third parties for development as potential traits;
- our ability to maintain, protect, and enhance our intellectual property;
- our future capital requirements and our ability to satisfy our capital needs;
- industry conditions and market conditions; and
- the use of the proceeds from this offering.

We caution you that the foregoing list may not contain all of the forward-looking statements made in this prospectus.

You should not rely upon forward-looking statements as predictions of future events. We have based the forward-looking statements contained in this prospectus primarily on our current expectations and projections about future events and trends that we believe may affect our business, financial condition, results of operations and prospects. The outcome of the events described in these forward-looking statements is subject to risks, uncertainties and other factors described in the section titled "Risk Factors" and elsewhere in this prospectus. Moreover, we operate in a very competitive and rapidly changing environment. New risks and uncertainties emerge from time to time and it is not possible for us to predict all risks and uncertainties that could have an impact on the forward-looking statements contained in this prospectus. We cannot assure you that the results, events and circumstances reflected in the forward-looking statements will be achieved or occur, and actual results, events or circumstances could differ materially from those described in the forward-looking statements.

The forward-looking statements made in this prospectus relate only to events as of the date on which the statements are made. We undertake no obligation to update any forward-looking statements made in this prospectus to reflect events or circumstances after the date of this prospectus or to reflect new information or the occurrence of unanticipated events, except as required by law. We may not actually achieve the plans, intentions or expectations disclosed in our forward-looking statements and you should not place undue reliance on our forward-looking statements. Our forward-looking statements do not reflect the potential impact of any future acquisitions, mergers, dispositions, joint ventures, or investments we may make.

USE OF PROCEEDS

We estimate that we will receive net proceeds from this offering of approximately $ million, or approximately $ million if the underwriters exercise their option in full to purchase additional shares of our common stock, based upon the assumed initial public offering price of $ per share (the midpoint of the estimated offering price range set forth on the cover page of this prospectus), after deducting the underwriting discounts and commissions and expenses of this offering.

Each $1.00 increase or decrease in the assumed initial public offering price of $ per share would increase or decrease the net proceeds that we receive from this offering by approximately $ million, assuming that the number of shares offered by us, as set forth on the cover page of this prospectus, remains the same and after deducting estimated underwriting discounts and commissions.

We will have broad discretion over the use of the net proceeds in this offering. As of the date of this prospectus, we cannot specify all of the particular uses for the net proceeds from this offering. We currently intend to use the net proceeds to us from this offering primarily for general corporate purposes, including working capital, capital expenditures, further development and commercialization of our products, and sales and marketing activities. We may also use a portion of the net proceeds to expand our business through investments in or acquisitions of other complementary strategic joint ventures, businesses, products or technologies. We do not have any understandings, commitments, or agreements with respect to any such acquisitions or investments at this time.

We intend to invest the net proceeds in short- and intermediate-term interest-bearing obligations, investment-grade instruments, certificates of deposit or guaranteed obligations of the U.S. government, pending their use as described above.

Some of the other principal purposes of this offering are to create a public market for our common stock and increase our visibility in the marketplace. A public market for our common stock will facilitate future access to public equity markets and enhance our ability to use our common stock as a means of attracting and retaining key employees and as consideration for acquisitions.

DIVIDEND POLICY

We have never declared or paid cash dividends on our capital stock. We currently intend to retain all available funds and any future earnings for use in the operation of our business and do not anticipate paying any cash dividends in the foreseeable future. Any decision to declare and pay cash dividends in the future will be made at the discretion of our board of directors and will depend on, among other things, our results of operations, cash requirements, financial condition, contractual restrictions including compliance with covenants under our debt agreements, and other factors that our board of directors may deem relevant. Certain of our current outstanding debt agreements prohibit us from paying cash dividends on our common stock.

CAPITALIZATION

The following table sets forth our cash and cash equivalents and capitalization as of September 30, 2014:

- on an actual basis;
- on a pro forma basis to give effect to (i) the automatic conversion of all outstanding shares of our preferred stock into an aggregate of 103,362,446 shares of common stock upon the closing of this offering, including the conversion of each share of our existing preferred stock (other than our Series D preferred stock) into one share of common stock and the conversion of all shares of our Series D preferred stock into 9,822,283 shares of common stock (or one share of common stock for each share of Series D preferred stock issued), and (ii) the effectiveness of our amended and restated certificate of incorporation immediately prior to the completion of this offering that, among other things, will increase our authorized number of shares of common stock; and
- on a pro forma as adjusted basis after giving effect to the application of the net proceeds from the sale of shares of common stock in this offering at an assumed public offering price of $ (the midpoint of the estimated offering price range set forth on the cover page of this prospectus).

You should read this table in conjunction with "Management's Discussion and Analysis of Financial Condition and Results of Operations" and our consolidated financial statements and related notes included elsewhere in this prospectus.

	As of September 30, 2014		
	Actual	Pro Forma	Pro Forma As Adjusted(1)
	(in thousands, except share and per share data)		
Cash and cash equivalents	$ 21,170	$ 21,170	$
Total indebtedness	14,536	14,536	
Redeemable convertible preferred stock, no par value: 10,533,770 shares authorized and 9,822,283 issued and outstanding, actual; no shares authorized, issued and outstanding, pro forma and pro forma as adjusted	32,448	—	
Convertible preferred stock, no par value: 94,586,346 shares authorized, 93,540,163 shares issued and outstanding, actual; no shares authorized, issued and outstanding, pro forma and pro forma as adjusted	48,783	—	
Stockholders' equity (deficit):			
Common stock: no par value, 140,000,000 shares authorized, 8,265,611 shares issued and outstanding, actual; par value per share: $0.001, shares authorized, 111,628,057 shares issued and outstanding, pro forma; par value per share: $0.001, shares authorized, shares issued and outstanding, pro forma as adjusted	—	—	
Undesignated preferred stock, $0.001 par value per share: no shares authorized, issued and outstanding, actual and pro forma; shares authorized, no shares issued and outstanding, pro forma as adjusted			
Additional paid-in capital	30,460	111,691	
Accumulated deficit	(111,982)	(111,982)	
Total stockholders' (deficit) equity	(81,522)	(291)	
Total capitalization	$ 14,245	$ 14,245	$

(1) Each $1.00 increase or decrease in the assumed initial public offering price of $ per share, which is the midpoint of the estimated offering price range set forth on the cover page of this prospectus, would increase or decrease, as applicable, the amount of additional paid-in capital, total stockholders' equity and total capitalization by approximately $ million, assuming the number of shares offered by us, as set forth on the cover of this prospectus, remains the same, and after deducting the estimated underwriting discounts and commissions payable by us.

DILUTION

If you invest in our common stock, your interest will be diluted to the extent of the difference between the public offering price per share of our common stock and the pro forma as adjusted net tangible book value per share of our common stock after this offering. Our pro forma net tangible book value as of September 30, 2014 was $ million, or $ per share of common stock. Pro forma net tangible book value per share represents total tangible assets less total liabilities, divided by the number of shares of common stock outstanding. After giving effect to our sale of our common stock in this offering at the initial public offering price of $ per share, and after deducting underwriting discounts and commissions and our estimated offering expenses, our pro forma as adjusted net tangible book value as of September 30, 2014 would have been $, or $ per share. This represents an immediate increase in net tangible book value of $ per share to our existing stockholders and an immediate dilution of $ per share to new investors purchasing shares of common stock in this offering. The following table illustrates this dilution on a per share basis:

Initial public offering price per share		$
Pro forma net tangible book value per share as of September 30, 2014	$	
Increase in net tangible book value per share attributable to new investors purchasing shares in this offering		
Pro forma net tangible book value per share after giving effect to this offering		
Dilution per share to new investors in this offering		$

Each $1.00 increase or decrease in the assumed initial public offering price of $ per share, which is the midpoint of the estimated offering price range set forth on the cover page of this prospectus, would increase or decrease, as applicable, our pro forma as adjusted net tangible book value per share to new investors by $, and would increase or decrease, as applicable, dilution per share to new investors in this offering by $, assuming that the number of shares offered by us, as set forth on the cover page of this prospectus, remains the same and after deducting estimated underwriting discounts and commissions. In addition, to the extent any outstanding options or warrants are exercised, new investors would experience further dilution.

The following table presents on a pro forma basis, as of September 30, 2014, the differences between the existing stockholders and new investors with respect to the number of shares of common stock purchased from us, the total consideration paid to us and the average price per share paid or to be paid to us at an assumed initial public offering price of $ per share, which is the midpoint of the estimated offering price range set forth on the cover page of this prospectus, before deducting estimated underwriting discounts and commissions:

	Shares Purchased		Total Consideration		Average Price
	Number	Percent	Amount	Percent	Per Share
Existing stockholders		%	$	%	$
New investors					
Total		100.0%	$	100.0%	

Each $1.00 increase or decrease in the assumed initial public offering price of $ per share, which is the midpoint of the estimating offering price range set forth on the cover page of this prospectus, would increase or decrease, as applicable, the total consideration paid by new investors and total consideration paid by all stockholders by approximately $ million, assuming that the number

of shares offered by us, as set forth on the cover page of this prospectus, remains the same and after deducting estimated underwriting discounts and commissions.

Except as otherwise indicated, the above discussion and tables assume no exercise of the underwriters' option to purchase additional shares. If the underwriters exercise their option to purchase additional shares in full, the total consideration paid by new investors and total consideration paid by all stockholders would (decrease) increase by approximately $ and $ per share, respectively, the pro forma as adjusted net tangible book value per share would be $ per share, and the dilution in pro forma as adjusted net tangible book value per share to new investors in this offering would be $ per share. Following such exercise, our existing stockholders would own % and our new investors would own % of the total number of shares of our common stock outstanding upon the closing of this offering.

SELECTED CONSOLIDATED FINANCIAL DATA

The following selected consolidated statements of operations data for the years ended December 31, 2012 and 2013 and the consolidated balance sheet data as of December 31, 2012 and 2013 are derived from our audited consolidated financial statements included elsewhere in this prospectus, and should be read together with our consolidated financial statements, the notes to our consolidated financial statements and "Management's Discussion and Analysis of Financial Condition and Results of Operations" contained elsewhere in this prospectus. The selected consolidated statements of operations data for the nine months ended September 30, 2013 and 2014 and the consolidated balance sheet data as of September 30, 2014 are derived from our unaudited consolidated financial statements included elsewhere in this prospectus. Our unaudited interim financial consolidated financial statements were prepared on a basis consistent with our audited consolidated financial statements and have included, in our opinion, all adjustments, consisting only of normal recurring adjustments that we consider necessary for a fair presentation of the financial information set forth in those statements.

	Year Ended December 31,		Nine Months Ended September 30,	
	2012	2013	2013	2014
	(in thousands, except share and per share amounts)			
Revenues:				
Product	$ 1,317	$ 1,102	$ 975	$ 266
License	2,526	1,625	626	462
Contract research and government grants	3,167	3,751	2,875	3,456
Total revenues	7,010	6,478	4,476	4,184
Operating expenses:				
Cost of product revenues(1)	909	673	586	1,932
Research and development(1)	7,948	8,404	6,219	7,942
Selling, general, and administrative(1)	8,283	7,967	5,970	7,833
Total operating expenses	17,140	17,044	12,775	17,707
Loss from operations	(10,130)	(10,566)	(8,299)	(13,523)
Interest expense	(186)	(626)	(358)	(1,048)
Other income (expense), net	8	5	5	(613)
Loss before income taxes and equity in loss of unconsolidated entity	(10,308)	(11,187)	(8,652)	(15,184)
Income tax provision	(213)	(167)	(131)	(235)
Equity in loss of unconsolidated entity	(1,849)	(1,841)	(1,539)	(932)
Net loss	(12,370)	(13,195)	(10,322)	(16,351)
Accretion of redeemable convertible preferred stock to redemption value	—	—	—	(2,088)
Net loss attributable to common stockholders	$ (12,370)	$ (13,195)	$ (10,322)	$ (18,439)
Net loss per share attributable to common stockholders, basic and diluted(2)	$ (1.51)	$ (1.61)	$ (1.26)	$ (2.24)
Weighted-average number of shares used in per share calculations, basic and diluted(2)	8,181,273	8,213,544	8,209,267	8,233,307
Pro forma net loss per share attributable to common stockholders, basic and diluted(2)		$ (0.13)		$
Weighted-average number of shares used in pro formaper share calculations, basic and diluted(2)		101,753,707		

(1) Includes stock-based compensation expense as follows:

	Year Ended December 31,		Nine Months Ended September 30,	
	2012	2013	2013	2014
	(in thousands)			
Research and development	$ 345	$ 414	$ 414	$ 152
Selling, general, and administrative	904	864	592	443
Total stock-based compensation	$ 1,249	$ 1,278	$ 1,006	$ 595

(2) See Note 13 of the notes to our consolidated financial statements for a description of how we compute net loss per share attributable to common stockholders, basic and diluted, and pro forma net loss per share attributable to common stockholders, basic and diluted.

	As of December 31,		As of September 30,
	2012	2013	2014
	(in thousands)		
Consolidated Balance Sheet Data:			
Cash and cash equivalents	$ 5,350	$ 2,835	$ 21,170
Working capital (deficit)	4,525	(4,977)	12,216
Total assets	13,359	9,542	26,468
Total indebtedness	8,000	14,492	14,536
Redeemable convertible preferred stock	—	—	32,448
Convertible preferred stock(1)	—	—	48,783
Additional paid-in capital	76,752	78,334	30,460
Accumulated deficit	(82,436)	(95,631)	(111,982)
Total stockholder's deficit	(5,684)	(17,297)	(81,522)

(1) The carrying value of $48.8 million related to the convertible preferred stock as of December 31, 2012 and 2013 was included as a component of additional paid-in capital.

MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

The following discussion and analysis of our financial condition and results of operations should be read in conjunction with our consolidated financial statements and the related notes to those statements included elsewhere in this prospectus. In addition to historical financial information, the following discussion and analysis contains forward-looking statements that involve risks, uncertainties and assumptions. Our actual results and timing of selected events may differ materially from those anticipated in these forward-looking statements as a result of many factors, including those discussed under "Risk Factors" and elsewhere in this prospectus.

Overview

We are a leading agricultural biotechnology trait development company with an extensive and diversified portfolio of late-stage crop productivity and product quality traits addressing multiple crops that supply the global food and feed markets. Our traits are focused on high-value enhancements that increase crop yields by enabling plants to more efficiently manage environmental and nutrient stresses, and that enhance the quality and value of agricultural products. Our traits increase value not only for farmers, but also for users of agricultural products. Our target market is the $39.4 billion global seed market. Our goal is to increase the value of this market significantly by increasing yields in the more than $1.0 trillion market for the five largest global crops, and to capture a portion of the increased value. There currently are more than 50 products in development incorporating our traits and there are 13 in advanced stages of development or on the market.

Our crop productivity traits are being utilized by our commercial partners to develop higher yielding seeds for the most widely grown global crops, including wheat, rice, soybean, corn, and sugarcane, as well as for other crops such as cotton, canola, turf, and trees. Our business model positions us at the nexus of basic research and commercial product development, as we apply our strong product development and regulatory capabilities to collaborate with, and leverage the skills and investments of, upstream basic research institutions and downstream commercial partners. We believe our approach significantly reduces risk and capital requirements, while simplifying and expediting the product development process. We also believe that our collaboration strategy leverages our internal capabilities, enabling us to capture much higher value than would otherwise be the case, and enabling our commercial partners to develop and commercialize products more cost-effectively.

We were incorporated in 2002 to pursue agricultural-based biotechnology business opportunities that improve the environment and human health, and in 2004, we entered into our first collaboration agreement with a potential commercial partner. In 2009, we completed the U.S. Food and Drug Administration, or FDA, regulatory process for our Sonova brand gamma linolenic acid safflower oil, called Sonova 400 GLA safflower oil, just six years after we first began developing the trait under a research and commercial agreement with Abbott. We introduced this product commercially in late 2010, and in 2014, we introduced Sonova Ultra GLA safflower oil, a more concentrated version of our Sonova 400 GLA safflower oil. We refer to these products as our Sonova products.

We have formed strategic partnerships and developed strong relationships with global agricultural leaders for development and commercialization of our traits in major crops and consumer products. Our collaborators include subsidiaries or affiliates of Limagrain (Vilmorin & Cie), Mahyco (Maharashtra Hybrid Seeds Company Limited), DuPont Pioneer (E.I. du Pont de Nemours and Company), SES Vanderhave, Genective (a joint venture between Limagrain and KWS SAAT), Scotts, U.S. Sugar, Abbott, Ardent Mills, Bioceres, and others. Additionally, in order to increase our participation in the value of two major crops, wheat and soybean, we have formed two joint ventures. Limagrain Cereal Seeds LLC is our joint venture with Limagrain for the development and commercialization of wheat products for North America. Verdeca LLC is our joint venture with

Bioceres for the development and deregulation of soybean traits globally. We intend to enter into future collaboration agreements and joint ventures depending on our assessment of which structure provides the best ratio of risk to investment return.

The process of developing and commercializing innovative traits and seed products requires significant time and investment. Our business model focuses on creating value by leveraging collaborator investments and capabilities upstream in basic research, and downstream in product development and commercialization. We bridge the gap between basic research and commercial development, reducing risk and adding value as a result. We reduce risk and avoid most of the costs associated with basic research by acquiring trait technologies that have already completed initial feasibility screening, thus achieving proof of concept, through basic research carried out elsewhere. We further develop these technologies by optimizing function and validating performance through intensive field trial testing in multiple crops. We then form collaborations with major seed and consumer product companies that develop and commercialize products incorporating our traits. As a result of our expertise and this additional development work, we are positioned to capture significantly greater payments in our downstream license and collaboration agreements than we believe is otherwise typical in our industry.

In certain instances, we will also work to complete the regulatory process to support the commercial launch of products containing our traits. We do this in order to obtain a greater share of the economics of the commercial product. We intend to pace our regulatory investments so that we only make such investments after the performance risk for the seed trait has been significantly reduced through extensive field testing. We may pursue regulatory investments if we believe that they will result in a highly positive rate of return due to increased payments from our commercial partners or joint ventures.

Our commercial strategy aims to balance our near-term revenue goals with long-term value capture. Our trait license agreements with our commercial partners contain two main types of financial components:

- A set of pre-commercialization payments from our commercial partners that are linked to their pursuit of technical and regulatory milestones under a well-defined diligence plan. The pre-commercialization payments typically include upfront and annual license fees, as well as multiple payments for key technical and development milestones such as demonstration of greenhouse efficacy, demonstration of field efficacy, regulatory submission, regulatory approval, and commercial launch. Under most of our license agreements, failure of our commercial partners to adhere to the diligence plan may result in a reduction, or elimination, of their license rights. The combination of diligence requirements and milestone payments motivates our commercial partners to develop and commercialize products containing our traits, while providing us with revenue to fund our development programs.

- Once a product containing one or more of our traits is commercialized, we are entitled to receive a portion of the revenue that it generates for our commercial partner. For seeds incorporating valuable traits, farmers typically pay either a premium for the seed or a trait fee. This premium or trait fee represents the additional value generated for our commercial partner by our trait(s), and we receive a percentage of this additional value. Typically, our share of this value ranges from 15 to 20%, and it can increase to a range of 37 to 50% under certain agreements if we elect to co-invest in product development and deregulation. We expect that our participation in joint ventures will provide us with an opportunity to recognize additional value from our traits.

While we seek patent protection on our technologies and traits, we have structured our commercial agreements so that we receive our percentage of additional commercial value whether or not patent protection is in effect at any particular time or place. Nearly all of our agreements provide

that access to our traits, and our right to receive a share of commercial value, continue for a set number of years after products containing our traits are commercialized. While the exclusive rights afforded by patents may enable our commercial partners to realize greater commercial value attributable to our traits, our right to receive a portion of that increased commercial value is not dependent on the existence of patent rights in a particular geography.

Most of our agreements include the grant of exclusive rights to a particular trait for use in a particular crop within a defined geography. To date, we have not granted exclusive rights to all of our traits for use in a particular crop to a single partner and, likewise, we have not granted exclusive rights to utilize a particular trait in all crops to a single partner. Our approach to selecting commercial partners involves careful consideration of their market channels and capabilities to ensure that they are well matched to the trait, crop, and geography that form the foundation of our commercial relationship.

The process of discovering, developing, and commercializing a seed trait through either genetic modification or advanced breeding involves multiple phases and takes an average of 13 years from discovery to commercialization. The length of the process may vary depending on both the complexity of the trait and the type of crop involved. This long product development cycle is in large part attributable to the limitations of natural growing seasons and the impact of this on the time it takes to breed commercial seed products. For genetically modified, or GM, seeds, there is also a rigorous and lengthy regulatory process that operates in parallel to the later stages of the seed breeding process.

Since our inception, we have devoted substantially all of our efforts to research and development activities, including the discovery, development, and testing of our traits and products in development incorporating our traits. To date, we have not generated revenues from sales of commercial products, other than limited revenues from our Sonova products, and we do not anticipate generating any revenues from commercial product sales other than from sales of our Sonova products for at least the next three to five years. We do receive revenues from fees associated with the licensing of our traits to commercial partners. Our long-term business plan and growth strategy is based in part on our expectation that revenues from products that incorporate our traits will comprise a significant portion of our future revenues.

We have never been profitable and had an accumulated deficit of $112.0 million as of September 30, 2014. We incurred net losses of $12.4 million and $13.2 million for the years ended December 31, 2012 and 2013, respectively, and $10.3 million and $16.4 million for the nine months ended September 30, 2013 and 2014, respectively. We expect to incur substantial costs and expenses before we obtain any revenues from the sale of seeds incorporating our traits. As a result, our losses in future periods could become even more significant, and we will need substantial additional funding to support our operating activities.

Components of Our Statements of Operations Data

Revenues

We derive our revenues from product revenues, licensing agreements, contract research agreements and government grants. We expect that over the next several years, a substantial majority of our revenues will consist of license revenues and contract research and government grant revenues until our product revenues increase with the introduction of our seed trait products to the market, if and when they are commercially available. Further, we expect that our license revenues will vary as we enter into new license agreements and with the timing of milestone payments and recognition of deferred upfront license fees under existing license agreements.

Product Revenues

Our product revenues to date have consisted solely of sales of our Sonova products. We generally recognize revenue from product sales upon delivery to our third-party distributors or customers. Our revenues will fluctuate depending on the timing of orders from our customers and distributors. Because some of our large customers and distributors order in bulk only one or two times a year, our product revenues may fluctuate significantly from period to period.

Product revenues accounted for 19%, 17%, 22%, and 6% of our total revenues for the years ended December 31, 2012 and 2013 and the nine months ended September 30, 2013 and 2014, respectively.

License Revenues

Our license revenues consist of up-front, nonrefundable license fees, annual license fees, and subsequent milestone payments that we receive under our research and license agreements. We generally recognize nonrefundable up-front license fees and guaranteed, time-based payments as revenue proportionally over the expected development period. We recognize annual license fees proportionally over the related term subject to cancellation provisions.

We recognize milestone payments as revenue when the related performance criteria are achieved. Milestones typically consist of significant stages of development for our traits in a potential commercial product, such as achievement of specific technological targets, completion of field trials, filing with regulatory agencies, completion of the regulatory process, and commercial launch of a product containing our traits. Given the seasonality of agriculture and time required to progress from one milestone to the next, achievement of milestones is inherently uneven, and our license revenues are likely to fluctuate significantly from period to period.

License revenues accounted for 36%, 25%, 14%, and 11% of our total revenues for the years ended December 31, 2012 and 2013 and the nine months ended September 30, 2013 and 2014, respectively.

Contract Research and Government Grant Revenues

Contract research revenues consist of amounts earned from performing contracted research primarily related to breeding programs or the genetic engineering of plants for third parties. We generally recognize revenue as these services are provided. In addition, we are entitled to receive a portion of the revenues generated from sales of products that incorporate our seed traits. Products expected to result from such contract research are in various stages of the product development cycle and we do not expect to generate any revenues from the sale of any such products for at least the next three to five years.

We receive payments from government entities in the form of government grants. Government grant revenues are recognized as eligible research and development expenses are incurred. Our obligation with respect to these agreements is to perform the research on a best-efforts basis.

Contract research and government grant revenues comprise a significant portion of our total revenues, accounting for 45%, 58%, 64%, and 83% of our total revenues for the years ended December 31, 2012 and 2013 and the nine months ended September 30, 2013 and 2014, respectively.

Operating Expenses

Cost of Product Revenues

Cost of product revenues relates to sale of our Sonova products and consists of in-licensing and royalty fees as well as the cost of raw materials, including inventory and third-party services costs related to procuring, processing, formulating, packaging, and shipping our Sonova products.

Research and Development Expenses

Research and development expenses consist of costs incurred in the discovery, development, and testing of our products and products in development incorporating our traits. These expenses consist primarily of employee salaries and benefits, fees paid to subcontracted research providers, fees associated with in-licensing technology, land leased for field trials, chemicals and supplies, and other external expenses. These costs are expensed as incurred. Additionally, we are required from time to time to make certain milestone payments in connection with the development of technologies in-licensed from third parties. We expense these milestone payments at the time the milestone is achieved and deemed payable. We expect our research and development expenses to increase on an absolute dollar basis for the foreseeable future, although our research and development expenses may increase significantly if we choose to accelerate certain research and development programs or if we elect to take a greater role in the regulatory and commercialization process with respect to one or more of our seed traits or products in development incorporating our seed traits. Our research and development expenses may also fluctuate from period to period as a result of the timing of various research and development projects.

Selling, General, and Administrative Expenses

Selling, general, and administrative expenses consist primarily of employee costs, professional service fees, and overhead costs. In addition, in the first half of 2014, we also incurred costs of $2.1 million paid to an advisor related to our financing efforts that ultimately resulted in the issuance of our Series D preferred stock. Notwithstanding these costs of $2.1 million, we expect our selling, general, and administrative expenses to increase substantially for the foreseeable future as we begin to operate as a public company after the completion of this offering, although our selling, general, and administrative expenses may fluctuate from period to period.

Interest Expense

Interest expense consists of interest costs related to our outstanding borrowings of promissory notes and convertible promissory notes payable to related and non-related parties.

Other Income (Expense), Net

Other income (expense), net, consists of changes in the fair value of our derivative liabilities related to our convertible promissory notes, gains or losses from the sale or retirement of property and equipment and interest income on our cash and cash equivalents.

Equity in Loss of Unconsolidated Entity

We use the equity method to account for our investment in Limagrain Cereal Seeds LLC, or LCS, a joint venture we formed with an affiliate of Limagrain and in which we hold a 35% interest. We account for LCS as an unconsolidated entity, as we exercise significant influence but do not have a controlling interest.

Income Tax Provision

Our income tax provision has not been historically significant, as we have incurred losses since our inception. As of December 31, 2013, we had federal and state net operating loss carryforwards of $77.6 million and $72.0 million, respectively, for which we have provided a full valuation allowance, as it is more likely that we will not realize the benefit of such net operating losses. The federal net operating loss carryforwards expire at various dates beginning in 2020 and the state net operating loss carryforwards expire at various dates beginning in 2014.

Results of Operations

Comparison of the Nine Months Ended September 30, 2013 and 2014

	Nine Months Ended September 30,	
	2013	2014
	(in thousands)	
Revenues:		
Product	$ 975	$ 266
License	626	462
Contract research and government grants	2,875	3,456
Total revenues	4,476	4,184
Operating expenses:		
Cost of product revenue	586	1,932
Research and development	6,219	7,942
Selling, general and administrative	5,970	7,833
Total operating expenses	12,775	17,707
Loss from operations	(8,299)	(13,523)
Interest expense	(358)	(1,048)
Other income, net	5	(613)
Loss before income taxes and equity in loss of unconsolidated entity	(8,652)	(15,184)
Income tax provision	(131)	(235)
Equity in loss of unconsolidated entity	(1,539)	(932)
Net loss	(10,322)	(16,351)
Accretion of redeemable convertible preferred stock to redemption value	—	(2,088)
Net loss attributable to common stockholders	$ (10,322)	$ (18,439)

Revenues

Our product revenues from sales of our Sonova products decreased by $0.7 million, or 73%, in the nine months ended September 30, 2014 compared to the nine months ended September 30, 2013. The decrease in product revenues was primarily due to the timing of large orders, as there were no bulk orders for our Sonova products from distributors during the nine months ended September 30, 2014. The timing for bulk orders fluctuates greatly as distributors tend to order large quantities on an infrequent basis.

Our license revenues decreased by $0.2 million, or 26%, in the nine months ended September 30, 2014 compared to the nine months ended September 30, 2013. The decrease in license revenues was primarily attributable to the timing of recognition of deferred upfront license fees.

Our contract research and government grant revenues increased by $0.6 million, or 20%, in the nine months ended September 30, 2014 compared to the nine months ended September 30, 2013. The increase was primarily driven by increased revenues associated with new grants obtained in the second half of 2013 and recognized as revenue in 2014, as well as increased activity under existing grants.

Revenues from Mahyco accounted for 12% and 14% of our total revenues for the nine months ended September 30, 2013 and 2014, respectively. Revenues from the U.S. Agency for International Development, or USAID, accounted for 28% and 49% of our total revenues for the nine months

ended September 30, 2013 and 2014, respectively. Revenues from the National Institutes of Health, or NIH, accounted for 3% and 12% of our total revenues for the nine months ended September 30, 2013 and 2014, respectively.

Cost of Product Revenues

Cost of product revenues increased by $1.3 million, or 230%, in the nine months ended September 30, 2014 compared to the nine months ended September 30, 2013 due to a $1.7 million reserve for inventory recorded in the nine months ended September 30, 2014. This reserve is primarily a result of changes in conditions of specific customers and regulatory delays related to the use of our Sonova products by certain new industries. The remaining decrease in the cost of product revenue is consistent with the decrease in product revenues.

Research and Development

Research and development expenses increased by $1.7 million, or 28%, in the nine months ended September 30, 2014 compared to the nine months ended September 30, 2013. The increase was primarily driven by an expense of $1.5 million recorded in the nine months ended September 30, 2014 relating to the September 2014 amendment of our Bioceres funding agreement pursuant to which we surrendered shares of Bioceres in exchange for a reduction of the annual commitment amount for 2014 and elimination of the 2015 commitment amount, as well as increased subcontracted services under various new and existing grants.

Selling, General, and Administrative

Selling, general, and administrative expenses increased $1.9 million, or 31%, in the nine months ended September 30, 2014 compared to the nine months ended September 30, 2013. The increase was due to costs of $2.1 million paid to an advisor upon the closing of our Series D preferred stock financing partially offset by a decline in stock-based compensation expense as some previously granted options became fully vested and as no new options were granted in 2013 or the nine months ended September 30, 2014.

Interest Expense

Interest expense was $1.0 million for the nine months ended September 30, 2014, an increase of $0.7 million compared to $0.4 million for the nine months ended September 30, 2013. The increase was primarily due to interest expense related to debt we issued to fund our operations, including our issuance of $3.6 million of promissory notes and $5.0 million of convertible promissory notes in the second half of 2013.

Other Income (Expense), Net

Other income (expense), net for the nine months ended September 30, 2014, primarily consisted of the $0.6 million increase in fair value of the derivative liabilities related to our convertible promissory notes that we entered into in the second half of 2013.

Accretion of Redeemable Convertible Preferred Stock to Redemption Value

Accretion of redeemable convertible preferred stock to redemption value was $2.1 million for the nine months ended September 30, 2014 as a result of our issuance of Series D preferred stock in the first half of 2014.

Comparison of the Years Ended December 31, 2012 and 2013

	Year Ended December 31,	
	2012	2013
	(in thousands)	
Revenues:		
Product	$ 1,317	$ 1,102
License	2,526	1,625
Contract research and government grants	3,167	3,751
Total revenues	7,010	6,478
Operating expenses:		
Cost of product revenues	909	673
Research and development	7,948	8,404
Selling, general and administrative	8,283	7,967
Total operating expenses	17,140	17,044
Loss from operations	(10,130)	(10,566)
Interest expense	(186)	(626)
Other income, net	8	5
Loss before income taxes	(10,308)	(11,187)
Income tax provision	(213)	(167)
Equity in loss of unconsolidated entity	(1,849)	(1,841)
Net loss	$ (12,370)	$ (13,195)

Revenues

Our product revenues decreased by $0.2 million, or 16%, in 2013 compared to 2012. The decrease in product revenues was primarily attributable to one of our largest distributors placing a significant order for our Sonova products at the end of 2012, as its exclusive distributor agreement expired at the end of 2012.

Our license revenues decreased by $0.9 million, or 36%, in 2013 compared to 2012. The decrease in license revenues was primarily attributable to two contractual milestones that were achieved in 2012 as compared to just one contractual milestone that was achieved in 2013.

Our contract research and government grant revenues increased by $0.6 million, or 18%, in 2013 compared to 2012. The increase was primarily driven by an increase in the number and amount of government grants we obtained in 2013, as well as increased research and development activity under existing grants.

Revenues from Mahyco accounted for 34% and 23% of our total revenues in 2012 and 2013, respectively. Revenues from USAID accounted for 11% and 26% of our total revenues in 2012 and 2013, respectively.

Cost of Product Revenues

Cost of product revenues decreased by $0.2 million, or 26%, in 2013 compared to 2012. The decrease in cost of product revenues at a higher rate than the decrease in product revenues was attributable to the expiration of an exclusive distributorship agreement at the end of 2012, which had a lower pricing structure due to the high volume of expected sales under the agreement.

Research and Development

Research and development expenses increased by $0.5 million, or 6%, in 2013 compared to 2012. The increase was primarily driven by an increase in subcontracted services in support of government grants, as well as additional field trials conducted during 2013.

Selling, General, and Administrative

Selling, general, and administrative expenses decreased by $0.3 million, or 4%, in 2013 compared to 2012. The decrease was primarily due to decreased expenditures for outside consulting services in 2013.

Interest Expense

Interest expense increased to $0.6 million in 2013 compared to $0.2 million in 2012 due to our issuance of $3.6 million of promissory notes and $5.0 million of convertible promissory notes in the second half of 2013.

Seasonality

We and our commercial partners operate in different geographies around the world and conduct field trials that are used for data generation, which must be conducted during the appropriate growing seasons of particular crops and markets. Often, there is only one crop-growing season per year for certain crops and markets. Similarly, climate conditions, and other variables on which sales of our products are dependent, may vary from season to season and year to year. In particular, weather conditions, including natural disasters such as heavy rains, hurricanes, hail, floods, tornadoes, freezing conditions, drought or fire, may affect the timing and outcome of field trials, which may delay milestone payments and the commercialization of products incorporating our seed traits. In the future, sales of commercial products that incorporate our seed traits will vary based on crop growing seasons and weather patterns in particular regions.

The level of seasonality in our business overall is difficult to evaluate at this time due to our relatively early stage of development, our relatively limited number of commercialized products, our expansion into new geographical markets and our introduction of new products and traits.

Liquidity and Capital Resources

Since our inception, we have funded our operations primarily with the net proceeds from private placements of equity and debt, and to a lesser extent, with payments that we have received under license agreements, from government grants, and from the sale of our Sonova products. As of September 30, 2014, we had cash and cash equivalents of $21.2 million. Our principal use of cash is to fund our operations, which are primarily focused on progressing our agricultural productivity and product quality seed traits through the regulatory process and to commercialization. This includes conducting replicated field trials, coordinating with our partners on their development programs and collecting, analyzing, and submitting field trial data to regulatory authorities. We believe that our existing cash and cash equivalents will be sufficient to meet our anticipated cash requirements for at least the next 12 months.

We do not currently expect to generate significant revenues from sales of our seed trait products under development for at least the next several years. We expect that research and development expenses will continue to constitute a significant portion of our operating expenses in the future, with the timing and magnitude of expenditures varying depending on the timing of various research and development projects. For example, as additional products in development incorporating our traits reach Phase 3 or later in the development process, we expect that the relative share of research and development expenses devoted to the regulatory process will increase. In addition, we can elect to increase our participation in, as well as our cost share of, the regulatory process in order to obtain a

greater share of the economics of the commercial product. We may also use a portion of the proceeds from this offering to expand our pipeline of seed traits in development.

We believe that the proceeds from this offering, together with our existing cash and future license and product revenues, including milestone revenues, will be sufficient to fund our operations through the commercialization of our initial products incorporating our next generation seed traits. We may consider entering into additional partner arrangements, seek further contract research revenues, pursue additional government grants, incur additional debt, or sell additional equity. Our incurrence of additional debt would result in debt service obligations and the instruments governing our debt could provide for operating and financing covenants that would restrict our operations. The sale of additional equity would result in dilution to our existing stockholders. If we are not able to secure adequate additional funding, we may be forced to reduce our spending, extend payment terms with our suppliers, liquidate assets, or suspend or curtail planned development programs. Any of these actions could harm our business, results of operations, and financial condition.

Term Note, Related Party

In July 2012, we entered into a 36-month unsecured term note with Moral Compass Corporation, our controlling stockholder, in the amount of $8.0 million. The interest rate on the loan was prime plus 2%, with interest paid monthly in arrears, and the principal was due in full at maturity in July 2015. In November 2014, we amended this note to change the maturity date to the first to occur of (i) April 1, 2016, (ii) the date of an event of default, or (iii) a date designated by Moral Compass Corporation no earlier than the 20th day following our completion of an equity financing with gross proceeds to us of at least $50.0 million. In addition, the interest rate on the term loan remains at prime plus 2% through December 31, 2014, after which the rate will increase to 11% per annum until maturity.

Promissory Notes

We entered into promissory notes in August 2013 and November 2013 in the amounts of $2.0 million and $1.1 million, respectively. The interest rate on the notes is fixed at 10% with principal and interest due in 36 equal monthly installments over the course of the three-year terms. Monthly principal and interest on the $2.0 million note is $65,000 and the three-year term ends in August 2016. Monthly principal and interest on the $1.1 million note is $35,000 and the three-year term ends in November 2016.

Convertible Promissory Notes

In September 2013, we entered into a note and warrant purchase agreement in the amount of $5.0 million with an affiliate of Mahyco, one of our commercial partners with which we have several research and license agreements. We issued a convertible promissory note under this agreement in exchange for $500,000 in September 2013 and issued a second convertible promissory note in exchange for $4.5 million in December 2013. The interest rate on the notes is prime plus 2%, compounded monthly over the course of the five-year terms ending in September and December 2018, respectively. At any time during the term, Mahyco may convert all or part of the aggregate outstanding balance of the notes (including principal and accrued but unpaid interest) into shares of our common stock at $4.13 per share. Mahyco has the right, at its option, to place another $5.0 million of convertible debt with us during the five-year term. Mahyco, at its option, may offset future fee payments to us due under any license agreements or contract research and development agreements with us against the outstanding balance of the note, including principal and accrued but unpaid interest. With the exception of such offset payments, no principal or interest is due until the end of the term. Under this note and warrant purchase agreement, we also issued Mahyco warrants to purchase 302,665 shares of our common stock at an exercise price of $4.13 per share. The warrants were issued in December 2013, vested immediately, and remain exercisable throughout the five-year term.

Cash Flows

The following table summarizes our cash flows for the periods indicated (in thousands):

	Year Ended December 31,		Nine Months Ended September 30,	
	2012	2013	2013	2014
Net cash provided by (used in):				
Operating activities	$ (9,588)	$ (9,745)	$ (7,011)	$ (12,129)
Investing activities	(285)	(600)	(590)	(1,483)
Financing activities	8,004	7,830	2,921	31,947
Net (decrease) increase in cash and cash equivalents	$ (1,869)	$ (2,515)	$ (4,680)	$ 18,335

Cash Flows from Operating Activities

Cash used in operating activities for the nine months ended September 30, 2014 was $12.1 million. Our net loss of $16.4 million and decrease in net operating assets of $0.1 million were partly offset by non-cash charges of $1.5 million relating to the amendment of our Bioceres funding agreement, $0.9 million for equity in loss of unconsolidated entity, $0.6 million for stock-based compensation, $0.3 million for accretion of debt discount, $0.6 million change in fair value of derivative liabilities, and $0.3 million for depreciation and amortization.

Cash used in operating activities for the nine months ended September 30, 2013 was $7.0 million. Our net loss of $10.3 million was offset in part by an increase in net operating assets of $0.5 million as well as non-cash charges of $1.5 million for equity in loss of unconsolidated entity, $1.0 million for stock-based compensation, and $0.3 million for depreciation and amortization.

Cash used in operating activities for the year ended December 31, 2013 was $9.7 million. Our net loss of $13.2 million and decrease in net operating assets of $0.1 million were partly offset by non-cash charges of $1.8 million for equity in loss of unconsolidated entity, $1.3 million for stock-based compensation, and $0.4 million for depreciation and amortization.

Cash used in operating activities for the year ended December 31, 2012 was $9.6 million. Our net loss of $12.4 million and decrease in net operating assets of $0.7 million were offset in part by non-cash charges of $1.8 million for equity in loss of unconsolidated entity, $1.2 million for stock-based compensation, and $0.4 million for depreciation and amortization.

Cash Flows from Investing Activities

Cash used in investing activities for the nine months ended September 30, 2014 of $1.5 million consisted primarily of our investment in Bioceres in accordance with our agreements concerning Verdeca.

Cash used in investing activities for the nine months ended September 30, 2013 of $0.6 million consisted of our $0.5 million investment in Bioceres and $0.1 million in purchases of property and equipment.

Cash used in investing activities for the year ended December 31, 2013 of $0.6 million consisted of our $0.5 million investment in Bioceres and $0.1 million in purchases of property and equipment.

Cash used in investing activities for the year ended December 31, 2012 of $0.3 million related to the purchase of property and equipment.

Cash Flows from Financing Activities

Cash from financing activities for the nine months ended September 30, 2014 of $32.0 million was related to the $32.8 million of net proceeds from our issuance of Series D preferred stock in the first half of 2014 and offset by $0.9 million of payments on notes payable and capital lease arrangements.

Cash from financing activities for the nine months ended September 30, 2013 of $2.9 million was related to proceeds from promissory notes, convertible promissory notes, and related party notes payable of $2.0 million, $0.5 million, and $0.5 million, respectively.

Cash from financing activities for the year ended December 31, 2013 of $7.8 million was primarily related to the proceeds from our issuance of notes payable, promissory notes, and convertible promissory notes and related common stock warrants issued to Mahyco of $8.6 million and offset by $0.7 million of our payments on notes payable and convertible promissory notes.

Cash from financing activities for the year ended December 31, 2012 of $8.0 million consists of proceeds from our issuance of a note to a related party.

Contractual Obligations and Other Commitments

Our future contractual obligations at December 31, 2013 were as follows (in thousands):

	Payments Due by Period(2)(3)				
	Less than 1 year	1 to 3 Years	3 to 5 Years	More than 5 years	Total
Non-cancelable operating leases	$ 859	$ 527	$ 94	$ —	$ 1,480
Capital lease	74	—	—	—	74
Notes payable due to a related party(1)	—	8,655	—	—	8,655
Promissory notes payable(1)	1,195	2,100	—	—	3,295
Convertible promissory notes payable(1)	262	563	5,616	—	6,441
License fees	25	—	—	—	25
Total contractual obligations	$ 2,415	$ 11,845	$ 5,710	$ —	$ 19,970

(1) Amounts include scheduled interest on our outstanding borrowings.

(2) Does not include any amounts related to contract research or other agreements with unrelated parties that require us to pay certain funding commitments, as these agreements are cancelable by us.

(3) Does not include any payments we may have to make under the contingent liability related to the Anawah acquisition, as the amount and timing of the ultimate payments are unknown. Please see Note 2 of the notes to our consolidated financial statements included elsewhere in this prospectus for more information.

We are obligated to make future payments to related and unrelated parties under in-license agreements, including certain license fees, royalties, and milestone fees. In addition, certain royalty payments ranging from the low single digits to mid-teens are payable on net revenue amounts as defined in the in-licensing agreements. Milestone payments under these agreements may also be payable upon the successful development or implementation of various technologies. The amount and timing of these payments are uncertain and have been excluded from the above table.

Off-Balance Sheet Arrangements

Since our inception, we have not engaged in any off-balance sheet arrangements, including the use of structured finance, special purpose entities, or variable interest entities.

Critical Accounting Polices and Estimates

Our management's discussion and analysis of our financial condition and results of operations is based on our financial statements, which have been prepared in accordance with generally accepted accounting principles in the United States, or U.S. GAAP. The preparation of these financial statements requires us to make estimates and assumptions that affect the reported amounts of assets and liabilities and the disclosure of contingent assets and liabilities at the date of the financial statements, as well as the reported revenue generated and expenses incurred during the reporting periods. Our estimates are based on our historical experience and on various other factors that we believe are reasonable under the circumstances, the results of which form the basis for making judgments about the carrying value of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates under different assumptions or conditions. We believe that the accounting policies discussed below are critical to understanding our historical and future performance, as these policies relate to the more significant areas involving management's judgments and estimates.

Revenue Recognition

We generate revenues through sales of product, license agreements, contract research agreements, and government grants. Revenue generated from our license agreements may include up-front, nonrefundable license fees, annual license fees, milestone payments, and future value-sharing payments subsequent to commercialization by our partners. We recognize revenue when the following criteria have been met: persuasive evidence of an arrangement with the customer exists, price and terms of the arrangement are fixed or determinable, delivery of the product has occurred or the service has been performed in accordance with the terms of the arrangement, and collectability is reasonably assured.

We generally recognize product revenues once passage of title has occurred. Shipping and handling costs charged to customers are recorded as revenues and included in cost of product revenues at the time the sale is recognized.

For revenue agreements with multiple-element arrangements, such as license and contract research agreements, we evaluate the arrangements to determine whether the deliverables can be separated or whether they must be accounted for as a single unit of accounting. This determination is generally based on whether any deliverable has stand-alone value to the customer. This analysis also establishes a selling price hierarchy for determining how to allocate arrangement consideration to identified units of accounting. When deliverables are separable, consideration received is allocated to the separate units of accounting based on the relative selling price method and the appropriate revenue recognition principles are applied to each unit. The selling price used for each unit of accounting is based on estimated selling price as neither vendor-specific nor third-party evidence is available. When we determine that an arrangement should be accounted for as a single unit of accounting, we must determine the period over which the performance obligations will be performed and revenue will be recognized over the performance period.

We have determined that, at the inception of each license agreement, there is only one deliverable for the license for, access to, and assistance with the development of the specified intellectual property. We recognize revenue from upfront payments proportionally over the term of our estimated period of performance under the agreement. On a quarterly basis, we review our estimated period of performance for our license agreements based on the progress under the arrangement and account for the impact of any changes on a prospective basis. We recognize annual license fees proportionally over the related term subject to cancellation provisions.

We recognize revenue related to milestone payments when the contractually specified performance obligations are achieved. Performance obligations typically consist of significant milestones in the development life cycle of the related technology, such as achievement of specific technological targets,

successful results from field trials, filing for approval with regulatory agencies, approvals granted by regulatory agencies and commercial launch of a product utilizing the licensed technology.

Contract research revenue consists of amounts earned from performing contracted research activities for third parties. Activities performed are related to breeding programs or the genetic engineering of plants and are subject to an executed agreement. We generally recognize fees for research activities ratably over the contractually specified performance period.

Grant revenues are recognized as eligible research and development expenses are incurred using a proportional performance recognition methodology.

Deferred revenue represents the portion of payments received that has not been recognized.

Inventories

Inventory costs are tracked on a lot-identified basis, valued at the lower of cost or market and are included as cost of product sales when sold. We compare the cost of inventories with market value and write down inventories to market value, if lower. We provide for inventory reserves when conditions indicate that the selling price may be less than cost due to physical deterioration, obsolescence, changes in price levels, or other factors. Additionally, we provide reserves for excess and slow-moving inventory to its estimated net realizable value. The reserves are based upon estimates about future demand from our customers and distributors and market conditions. Future events that could significantly influence the Company's judgment and related estimates include conditions in target markets, introduction of new products or changes to current or future competitor products.

Stock-Based Compensation

We recognize compensation expense related to stock options granted to employees and directors based on the estimated fair value of the awards on the date of grant, net of estimated forfeitures. We estimate the grant date fair value, and the resulting stock-based compensation expense, using the Black-Scholes option-pricing model. The grant date fair value of the stock-based awards is generally recognized on a straight-line basis over the requisite service period, which is generally the vesting period of the respective awards.

We recognize compensation expense for equity instruments issued to non-employees based on the estimated fair value of the equity instrument. The fair value of the non-employee awards is subject to re-measurement at each reporting period until services required under the arrangement are completed, which is the vesting date.

We recorded stock-based compensation expense related to equity awards of $1.2 million, $1.3 million, $1.0 million, and $0.6 million for the years ended December 31, 2012 and 2013 and the nine months ended September 30, 2013 and 2014, respectively. This expense relates to equity awards made prior to January 1, 2013. We did not grant any equity awards in the year ended December 31, 2013 or in the nine months ended September 30, 2014.

In October 2014, our Board of Directors approved the grant of options to purchase an aggregate of 500,000 shares of common stock with an exercise price of $1.53 per share. In February 2015, our Board of Directors approved the grant of options to purchase an aggregate of 980,000 shares of common stock with an exercise price of $1.80 per share.

In determining the fair value of stock-based awards, we use the Black-Scholes option-pricing model and assumptions discussed below. Each of these inputs is subjective and generally requires significant judgment to determine.

Expected Term—The expected term represents the period that stock-based awards are expected to be outstanding and was estimated based on historical and anticipated future exercise activity.

Expected Volatility—Since we are privately held and do not have any trading history for our common stock, the expected volatility was estimated based on the average historical volatilities of common stock of comparable publicly traded entities over a period equal to the expected term of the stock option grants. The comparable companies were chosen based on their similar size, stage in the life cycle, or area of specialty. We will continue to apply this process until a sufficient amount of historical information regarding the volatility of our own stock price becomes available.

Risk-Free Interest Rate—The risk-free interest rate is based on the U.S. Treasury zero coupon issues in effect at the time of grant for periods corresponding with the expected term of option.

Expected Dividend—We have never paid dividends on our common stock and have no plans to pay dividends on our common stock. Therefore, we used an expected dividend yield of zero.

In addition to the Black-Scholes assumptions, we estimate our forfeiture rate based on an analysis of our actual forfeitures and will continue to evaluate the adequacy of the forfeiture rate based on actual forfeiture experience, analysis of employee turnover behavior, and other factors. The impact from any forfeiture rate adjustment would be recognized in full in the period of adjustment and if the actual number of future forfeitures differs from our estimates, we might be required to record adjustments to stock-based compensation in future periods.

Historically, for all periods prior to this initial public offering, the fair value of the shares of common stock underlying our share-based awards were estimated on each grant date by our board of directors, which intended all stock options granted to be exercisable at a price per share not less than the per share fair market value of our common stock underlying those options on the date of grant. Given the absence of a public trading market for our common stock, our board of directors exercised reasonable judgment and considered a number of objective and subjective factors to determine the best estimate of the fair value of our common stock, including our stage of development; progress of our research and development efforts; the rights, preferences and privileges of our preferred stock relative to those of our common stock; equity market conditions affecting comparable public companies and the lack of marketability of our common stock. To assist our board of directors in this determination and in order to set the exercise price of each stock option grant, our management informed them of the most recent available valuation analysis prior to the dates of grant.

For purposes of our October 2014 and February 2015 option grants, our board of directors determined the fair market value of our common stock after consideration of the factors listed above, including the contemporaneous independent third-party valuation as of September 15, 2014. The valuation uses the income approach and the market approach. The income approach estimates the fair value of a company based on the present value of the company's future estimated cash flows. These future cash flows are discounted to their present values using an appropriate discount rate, to reflect the risks inherent in the company achieving these estimated cash flows. The discount rate used in our valuation was based primarily on benchmark venture capital studies of other companies in similar stages of development. The market approach determines the fair value of the company by estimating the value of the business based on projecting a future value under an initial public offering scenario, referencing recent biotechnology initial public offerings, our 2014 Series D preferred stock transaction, and an estimate of value under a merger and acquisition scenario. The estimated enterprise value is then allocated to the common stock using both the Option Pricing Method, or OPM, and the Probability Weighted Expected Return Method, or PWERM, or the hybrid method. The hybrid method applies the PWERM utilizing the probability of two exit scenarios, an initial public offering or an acquisition, and the OPM was utilized in the continuing as a private company scenario.

For stock options and other equity awards after the completion of this offering, our board of directors will determine the fair value of each share of underlying common stock based on the closing price of our common stock as reported on The NASDAQ Global Market on the date of grant.

Income Taxes

We use the asset and liability method of accounting for income taxes. Under this method, deferred tax assets and liabilities are determined based on the differences between the financial reporting and the tax bases of assets and liabilities and are measured using the enacted tax rates and laws that will be in effect when the differences are expected to reverse. A valuation allowance is provided when it is more likely than not that some portion or all of a deferred tax asset will not be realized.

As of December 31, 2013, we had net operating loss carryforwards for federal income tax reporting purposes of $77.6 million, which begin to expire in 2020, and state net operating loss carryforwards of $72.0 million, which begin to expire in 2014.

Quantitative and Qualitative Disclosures about Market Risk

As of December 31, 2013 and September 30, 2014, we had cash and cash equivalents of $2.8 million and $21.2 million, respectively, which consisted primarily of bank deposits. Such interest-earning instruments carry a degree of interest rate risk; however, historical fluctuations of interest income have not been significant.

We have not been exposed nor do we anticipate being exposed to material risks due to changes in interest rates. A hypothetical 10% change in interest rates during any of the periods presented would not have had a material impact on our consolidated financial statements.

Recent Accounting Pronouncements

In April 2014, the Financial Accounting Standards Board, or FASB, issued Accounting Standards Update (ASU) ASU 2014-08, *Presentation of Financial Statements (Topic 205) and Property, Plant, and Equipment (Topic 36)*, which amends the definition of a discontinued operation in ASC 205-20 and requires entities to provide additional disclosures about disposal transactions that do not meet the discontinued-operations criteria. The revised guidance will change how entities identify and disclose information about disposal transactions under U.S. GAAP. The ASU applies to all entities and is effective for annual periods beginning after December 15, 2014 and interim periods thereafter, with early adoption permitted. We do not anticipate that the adoption of this ASU will change the presentation of our consolidated financial statements.

In May 2014, the FASB issued ASU 2014-09, *Revenue from Contracts with Customers*, which requires an entity to recognize the amount of revenue to which it expects to be entitled for the transfer of promised goods or services to customers. The ASU will replace most existing revenue recognition guidance in U.S. GAAP when it becomes effective. The new standard will be effective for us beginning January 1, 2017. Early application is not permitted. The standard permits the use of either the retrospective or cumulative effect transition method. We are evaluating the effect that ASU 2014-09 will have on our consolidated financial statements and related disclosures. We have not yet selected a transition method nor have we determined the effect of the standard on our ongoing financial reporting.

In August 2014, the FASB issued ASU 2014-15, *Disclosure of Uncertainties about an Entity's Ability to Continue as a Going Concern*, which provides guidance on determining when and how to disclose going-concern uncertainties in the consolidated financial statements. The new standard requires management to perform interim and annual assessments of an entity's ability to continue as a going concern within one year of the date the financial statements are issued. An entity must provide certain disclosures if "conditions or events raise substantial doubt about the entity's ability to continue as a going concern." The ASU applies to all entities and is effective for annual periods ending after December 15, 2016, and interim periods thereafter, with early adoption permitted. We do not anticipate a material change to our consolidated financial statements upon the adoption of this ASU. However, we will be required to evaluate and determine if further disclosure is necessary at each balance sheet date.

INDUSTRY OVERVIEW

Industry Overview and Macro Drivers

Global agricultural production continues to expand in response to a growing population, an increasing standard of living in emerging markets, and the resulting increased demand for higher-quality food. According to the United States Department of Agriculture, or USDA, the annual global food market was estimated to be approximately $4 trillion in 2012. This market was supplied by 164 crops that, according to the Food and Agriculture Organization of the United Nations, or FAO, generated approximately $2.6 trillion in annual farm revenue in 2012. Of these crops, the top five (rice, corn, wheat, soybean, and sugarcane) accounted for more than $1.0 trillion in annual farm revenue as of 2012. Global crop production utilizes several key inputs. According to MarketLine, the global fertilizer industry was $183.3 billion in 2012. According to Phillips McDougall, the global crop protection chemicals industry was $54.2 billion and the global seed industry was $39.4 billion in 2013.

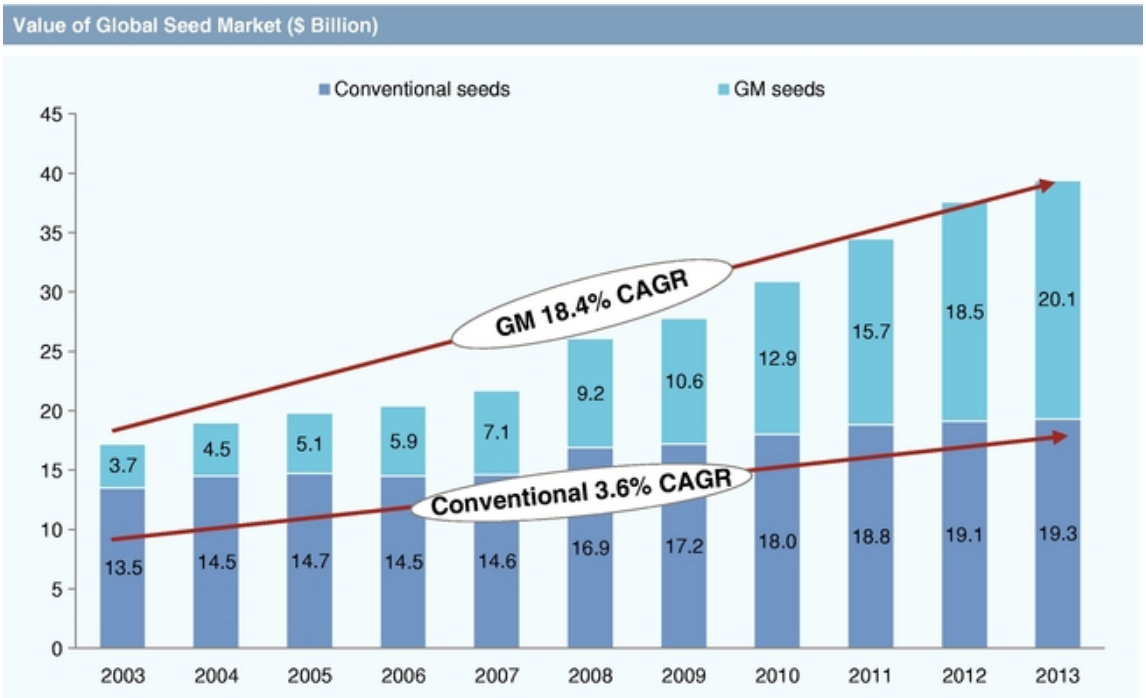
The combination of population growth and rising incomes in emerging markets is expected to continue driving increased demand for higher value food, particularly meat. Growth in global meat consumption directly increases the need for agricultural crop products. In 2009, the FAO estimated that supplies of agricultural products will need to increase 60% by 2050 in order to meet global food demand. Due to constrained land and water resources, the FAO also estimated that approximately 90% of this increase will need to come from increased farm yield and increased farming intensity.

Over the last several decades, consecutive waves of innovation have provided new solutions for increasing agricultural yields. Improved irrigation techniques, enhanced mechanization, increasing use of fertilizers and crop protection chemicals, and improved seed varieties have contributed to significant increases in yield.

Traditional plant breeding techniques have resulted in a very long history of increasing crop yields. Over the past two decades, advances in plant biotechnology have led to the development and commercialization of novel characteristics, or traits, in crops. Seeds developed using biotechnology techniques rather than conventional plant breeding are generally known as biotech seeds. Biotech seeds that are developed using genetic modification techniques are known as genetically modified, or GM, seeds. There are also biotechnology techniques, such as marker assisted selection, that do not involve genetic modification and, therefore, do not result in GM seeds. The GM seed industry has historically focused on mitigating the negative yield impact of living, or biotic, plant stresses, such as insect pests, diseases, and weeds. To date, GM seed traits have generally been herbicide tolerance and insect resistance, and have primarily been commercialized by companies with significant crop protection chemical platforms. Seeds with these traits have achieved strong commercial success, reaching market share in excess of 90% in key crops and countries as of 2013. These traits, initially offered individually, are increasingly available in combinations, or stacks, leading to an increase in seed value and significant growth in the GM seed industry.

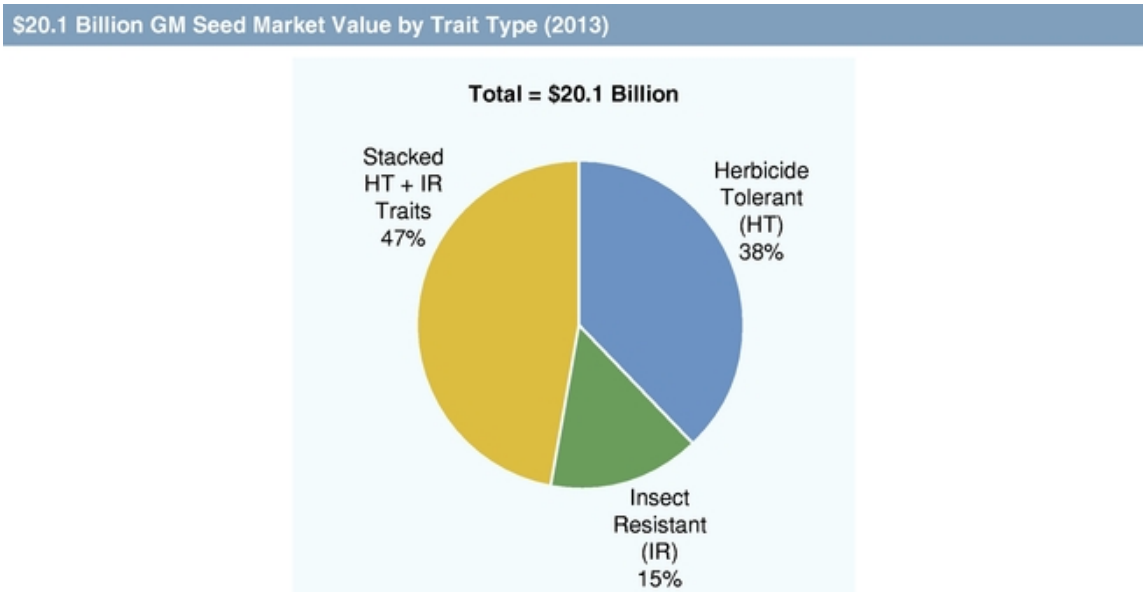
Phillips McDougall estimates that the market for GM seeds was approximately $20.1 billion in 2013, or approximately 51% of the total $39.4 billion seed market. According to Phillips McDougall, the total market for conventional seeds grew at a compound annual growth rate, or CAGR, of 3.6% between 2003 and 2013. During the same period, GM seed market growth was at a CAGR of 18.4%, far outpacing growth in the conventional seed market.

The graph below depicts the growth in value of GM and conventional seed markets from 2003 through 2013.



Source: Seed Industry Synopsis, Phillips McDougall, June 2014

The chart below shows the composition of the $20.1 billion GM seed market in 2013 by type of trait and illustrates the dependence on biotic stress traits as well as the significant market share of stacked biotic traits.



Source: Seed Traits, Phillips McDougall, July 2014

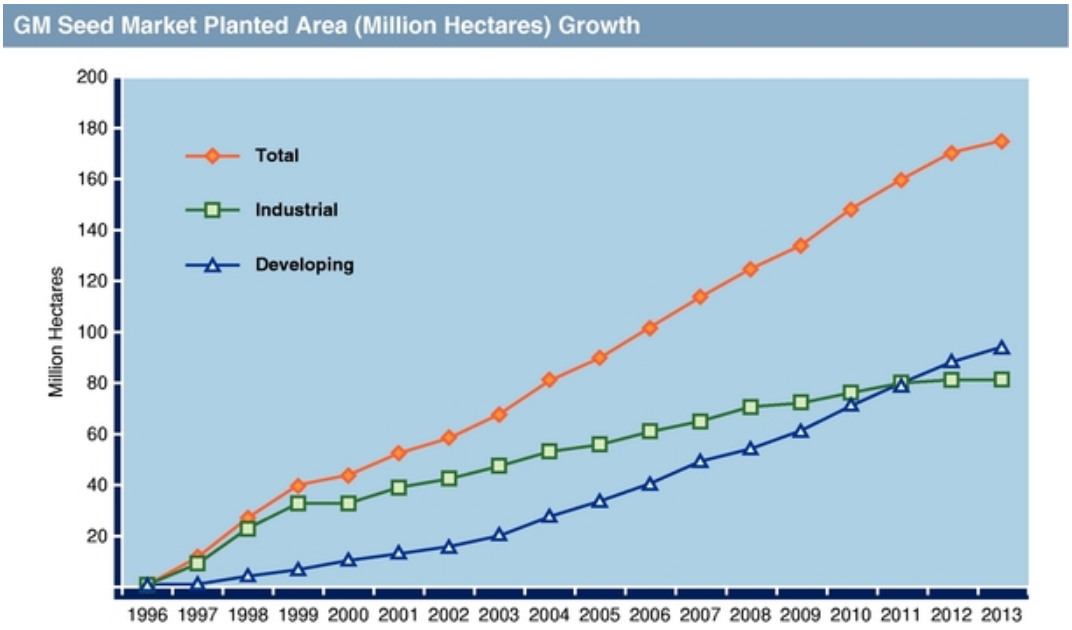
Abiotic plant stresses, or those caused by non-living factors such as heat, drought, flooding, salinity, and nutrient availability, can have a significantly greater negative impact on yield than biotic stresses. Commercially available solutions to manage abiotic stresses are currently limited, but have been the focus of recent innovation efforts. Seed companies are working to develop portfolios of abiotic traits such as nitrogen use efficiency, water use efficiency, drought tolerance, heat tolerance, salinity tolerance, and flooding tolerance, among others.

Innovative traits can provide significant additional value to farmers. Planting seed is a relatively low cost input for farmers, representing less than 10% of average total costs in 2013 according to the USDA. GM seeds can provide farmers with increased profitability at a relatively low increase in operating costs by means of increased yields, reduced cost of inputs such as chemicals, or enhanced product quality. The historic success of increasing farm profits through the use of GM seeds has fueled the development of the agricultural biotechnology industry, and farmers have historically shared a significant portion of their economic benefit with the GM seed provider in the form of seed premiums.

History of Innovation in the Seed Market

Historically, crop improvements came from conventional plant breeding approaches involving the selection and advancement of exceptional individual plants within a population. Because of the low frequency and generally low margin of improvement for any individual plant, this approach requires many generations and numerous years of breeding to develop a significantly improved variety. Plant biotechnology techniques, including genetic modification, have significantly enhanced the capabilities of plant breeders and facilitated the development improved varieties with valuable traits. Other biotechnology techniques, including advanced methods of selection and screening, build on knowledge gained from genetic research and have also led to the development of valuable new traits at a faster pace.

Since the early 1990s, the number of research programs involving biotech plants has grown enormously. Crops containing GM traits were first introduced in 1995 and the total area planted with GM seeds has been steadily growing, both in industrial and developing countries, as illustrated by the chart below.



Source: Clive James, 2013, ISAAA

As illustrated earlier, the GM seeds on the market today are primarily focused on two types of traits, herbicide tolerance and insect resistance, both of which address biotic stress issues. There are also a few commercialized product quality traits available, most of which are focused on changing the fatty acid composition of plant oils produced by soybean and canola seeds. While research and innovation into traits addressing abiotic stresses, such as heat, drought, flooding, salinity, and nutrient availability, is ongoing, there were only three such traits on the market as of 2013 according to Phillips McDougall.

As discussed, herbicide tolerance and insect resistance traits were the first types of GM seeds to be successfully introduced. LibertyLink, introduced in 1995 by Bayer, and Roundup Ready, introduced in 1996 by Monsanto, provide resistance to broad spectrum herbicides and allow farmers to use these on their fields instead of complex and more expensive combinations of selective herbicides. More recently, the range of available herbicide tolerance traits has broadened, providing resistance to multiple herbicides, although many are available only for selected crops.

Since the introduction of herbicide tolerance and insect resistance traits in 1996, many major seed companies have commercialized multiple seed products with these traits. The use of herbicide tolerant and insect resistant seeds enables farmers to reduce their use of herbicides and insecticides on crops. Some of the increased profit realized by farmers is shared with seed providers in the form of a premium paid for the improved seeds.

Biotech seeds, and specifically GM seeds, have been adopted by an increasing number of countries since their introduction in 1995. According to International Service for the Acquisition of Agri-Biotech Applications, or ISAAA, the global area of GM crops has increased more than 100-fold from 1.7 million hectares in 1996 to over 175 million hectares in 2013, making GM crops the highest growth crop technology in recent history. According to ISAAA, as of 2013, 27 countries have grown GM crops and more than half of the world's population, or 60%, live in those countries. The United States continues to be the leading producer of GM crops globally with 70.1 million hectares, and average adoption level of 90% across all crops. Six developing countries—Brazil, Argentina, India, China, Paraguay, and South Africa—grew approximately 49% of global GM crops.

The graphic below identifies the 27 countries growing GM crops and the area grown in each country.

Countries That Have Adopted GM Crops

50,000 hectares (125,000 acres), or more

		Million Hectares
1.	USA	70.1
2.	*Brazil**	*40.3*
3.	*Argentina**	*24.4*
4.	*India**	*11.0*
5.	Canada	10.8
6.	*China**	*4.2*
7.	*Paraguay**	*3.6*
8.	*South Africa**	*2.9*
9.	*Pakistan**	*2.8*
10.	*Uruguay**	*1.5*
11.	*Bolivia**	*1.0*
12.	*Philippines**	*0.8*
13.	Australia	0.6
14.	*Burkina Faso**	*0.5*
15.	*Myanmar**	*0.3*
16.	Spain	0.1
17.	*Mexico**	*0.1*
18.	*Colombia**	*0.1*
19.	*Sudan**	*0.1*

Less than 50,000 hectares

*Chile**	Czech Republic
*Honduras**	*Costa Rica**
Portugal	Romania
*Cuba**	Slovakia

** Developing countries*

Source: Clive James, 2013. Global Status of Commercialized Biotech/GM Crops for 2013: ISAAA Brief 46.

In markets where GM seeds are commercialized, market penetration is significant by crop type, as illustrated in the table below.

GM Seed Planted Areas for Key Crops (based on 2013 data)

CORN			SOYBEAN			COTTON		
Country	Sales $mm	GM utilization (% of area planted)	Country	Sales $mm	GM utilization (% of area planted)	Country	Sales $mm	GM utilization (% of area planted)
USA	9,294	92.1	USA	3,646	96.0	India	667	96.9
Brazil	2,433	81.4	Brazil	1,651	86.6	USA	598	99.3
Argentina	926	90.2	Argentina	898	98.1	China	230	80.1
Mexico	789	-	Canada	197	90.7	Pakistan	87	87.7
China	584	-	Paraguay	174	96.9	Argentina	49	97.2
Other	3,327	N/A	Other	521	N/A	Other	188	N/A
Total	**17,353**		**Total**	**7,087**		**Total**	**1,819**	

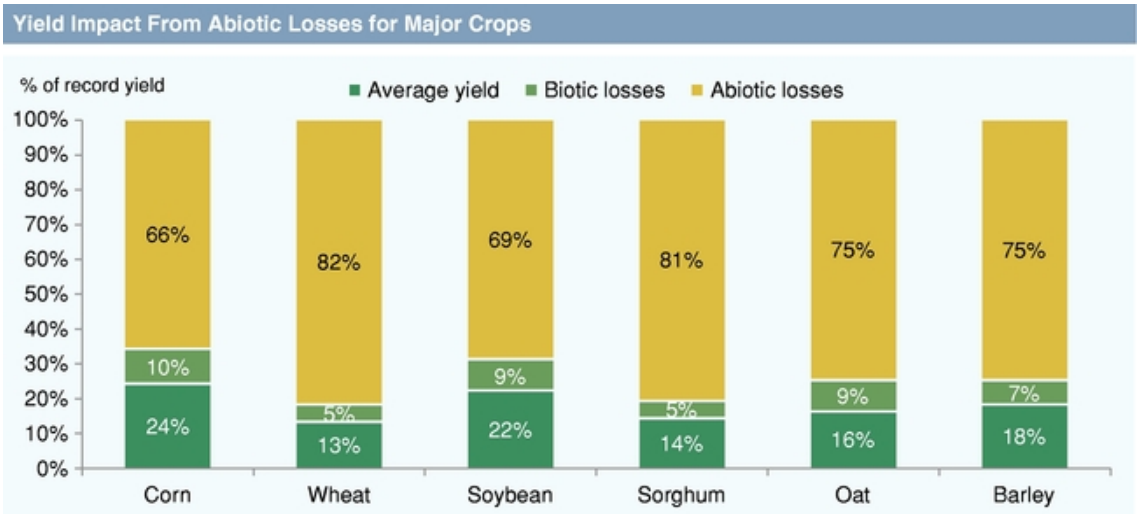
Source: Phillips McDougall, 2013

Next Generation Seed Traits

Next generation seed trait research is focused on the development of new technologies that address unmet needs such as abiotic stress tolerance and agricultural product quality. Seed traits are generally divided into two main categories, agricultural productivity and product quality traits. Agricultural productivity traits add value to farmers by decreasing production costs and increasing yield. Product quality traits increase the value of crops to crop processors, food and feed manufacturers and consumers by altering the composition of the harvested product.

Traits addressing abiotic stresses that limit crop yields have significant potential for increasing global yields and farmer profits. For example, conventional crops are inherently inefficient in the use of nitrogen fertilizer, the key yield-driving nutrient, and a $104.6 billion product within the $183.3 billion fertilizer industry. Research published in Plant Biotechnology Journal reported that only 30 to 50% of added nitrogen fertilizer is taken up by agricultural crops, with the remainder left unutilized and potentially becoming a significant environmental pollutant. Nitrogen use efficiency, or NUE, traits are designed to improve crop use of nitrogen and are expected to provide farmers with higher profits by increasing yields or decreasing the use of nitrogen fertilizer.

Other abiotic stresses such as heat, drought, flooding, salinity, and nutrient availability have significant negative impacts on yield and are largely unaddressed by currently available products. Abiotic stress tolerance traits are designed to reduce the negative impact of this natural response and significantly enhance yield potential. As illustrated in the chart below, yield losses from abiotic stresses significantly outweigh the impact of losses from biotic stresses and, as a result, the potential value of traits addressing abiotic stresses is expected to be significantly higher than the value of currently commercialized biotic stress traits.



Source: Biochemistry and Molecular Biology of Plants, Buchanan, Gruissem, Jones, American Society of Plant Physiologists, 2000.

The GM seed industry has historically focused on crops and traits where the combination of large acreage and high input costs (such as pest and weed control chemical costs) create significant economic value for a trait. In contrast, a number of crops with very large planted areas and high potential for yield improvement remain largely unpenetrated by the GM seed industry today. These represent a large opportunity for market expansion with next generation seed traits. For example, wheat—the most widely grown global crop in 2013 according to the FAO—represents a large potential market for GM seed development. The same is true for rice, the third most widely grown global crop in 2013 according to the FAO.

The following table, based on a 2015 Phillips McDougall analysis, sets forth the estimated commercial value of key agricultural productivity traits in the most widely grown global crops. Estimated trait commercial value refers to the total revenue potential for seed providers generated from the premium charged on biotechnology seeds due to the added value of the improved trait. The estimated trait commercial value was calculated by multiplying the estimated number of acres per country that could be planted with a particular biotechnology trait by the estimated premiums that will be charged to growers by seed providers. The values displayed are in constant 2013 U.S. Dollar terms.

Crop	Trait	Estimated Trait Commercial Value ($ Million)(1) From	To	Key Growing Regions(2)
Corn	Nitrogen Use Efficiency	1,285	2,205	NAFTA, LATAM, China
	Water Use Efficiency	557	976	
	Heat Tolerance	557	976	
	Crop Total	*2,399*	*4,157*	
Soybeans	Nitrogen Use Efficiency	747	1,269	NAFTA, LATAM
	Water Use Efficiency	373	642	
	Salinity Tolerance	373	523	
	Heat Tolerance	373	523	
	Crop Total	*1,866*	*2,957*	
Rice	Nitrogen Use Efficiency	535	910	India+, China, Asia
	Water Use Efficiency	269	535	
	Salinity Tolerance	269	535	
	Heat Tolerance	269	535	
	Crop Total	*1,342*	*2,515*	
Wheat	Nitrogen Use Efficiency	573	1,136	NAFTA, Europe, India+, China, Australia
	Water Use Efficiency	487	569	
	Salinity Tolerance	429	569	
	Heat Tolerance	429	569	
	Herbicide Tolerance	417	571	
	Crop Total	*2,335*	*3,414*	
Cotton	Nitrogen Use Efficiency	189	312	NAFTA, LATAM, India+
	Water Use Efficiency	97	176	
	Salinity Tolerance	97	176	
	Heat Tolerance	97	176	
	Crop Total	*480*	*840*	
Canola	Nitrogen Use Efficiency	142	227	NAFTA, LATAM, India, China
	Water Use Efficiency	75	114	
	Salinity Tolerance	75	114	
	Heat Tolerance	75	114	
	Crop Total	*368*	*569*	
Sugarcane	Nitrogen Use Efficiency	42	70	NAFTA, LATAM, India, China
	Water Use Efficiency	25	53	
	Heat Tolerance	21	41	
	Crop Total	*88*	*164*	
All Crops	***All Traits***	***8,878***	***14,616***	

(1) The range of estimated increase in price attributed to the addition of a novel newly developed trait for each combination of traits, crop, and region.

(2) NAFTA= Canada, U.S. Mexixo; LATAM= Central & South America; India+= India, Pakistan, Bangladesh, Sri Lanka; Asia= S.E. Asia (excluding China)

Innovation and Commercialization Process in Biotech Seed Traits

Developing and integrating seed traits into commercial seeds using advanced breeding or biotechnology is a lengthy process. The length of the process may vary depending on the complexity of the trait and the type of crop involved. The development process for GM seed traits is divided into several discrete steps, or phases, which generally include discovery, validation, and development through field trials, regulatory review, and commercial launch of a GM seed product containing the trait. The following table summarizes these phases, indicates the timeframes that may be required to complete each phase, and provides an estimate of the average probability of commercial success at each phase. This table is substantially based on the development stages described in Monsanto Supplemental Information for Investors, April 6, 2011, which we refer to as the Monsanto Toolkit and which we believe has been adopted by other companies and research analysts as an industry standard for seed trait development. We believe that the Monsanto Toolkit framework has been adopted by the industry because the factors that affect the duration and probability of success of each stage in the GM trait research and development process are comparable across companies within the industry, due in part to the impact of plant biology on the development process and timeline. Although we believe the development stages described in the Monsanto Toolkit are generally applicable to trait research and development, whether conducted by Monsanto or by other companies, including us, the actual development time for any particular product and the probability of success will vary and is dependent on many factors, including those set forth in "Risk Factors."

Overview of GM Trait Research and Development Process

Phase	Description	Average Duration, Months[1]	Average Probability of Success[2]
Discovery Gene/Trait Identification	Screening of genetic resources for target genes. Most promising target genes move to Phase 1.	24-48	5%
Phase 1 Proof of Concept	Test genetic constructs in plants to screen for desired performance. Determine most promising leads for application to crops of interest.	12-24	25%
Phase 2 Early Development	Conduct laboratory, greenhouse and initial field trials of traits in plants to select potential commercial product candidates.	12-24	50%
Phase 3 Advanced Development	Demonstrate efficacy of traits in commercial quality events through additional field trials. Begin development of regulatory data as appropriate.	12-24	75%
Phase 4 Regulatory/Pre-Launch	Complete regulatory process as needed. Develop plans and other requirements for commercial launch.	12-36	90%
Phase 5 Commercial	On-market.		

(1) *Source: Monsanto Supplemental Information for Investors, April 6, 2011.* Time estimates based on Monsanto experience; they can overlap. Total development time for any particular product may be shorter or longer than the time estimated here.

(2) *Source: Monsanto Supplemental Information for Investors, April 6, 2011.* This is the estimated average probability that the traits will ultimately become commercial products, based on Monsanto's experience. These probabilities may change over time. Commercialization is dependent on many factors, including successful conclusion of the regulatory process.

In the early stages of development, the process for developing seed traits is similar under both conventional and GM approaches. However, the two methods differ significantly in later phases of development. Completing regulatory review for GM seeds is a far more comprehensive and lengthy process than for conventionally developed seeds. However, the plant breeding required to develop commercial seed products based on GM technologies is typically carried out in parallel to the regulatory process, meaning that the regulatory process may not be rate-limiting in all situations.

Participation in different stages of the trait development and commercialization process carries different levels of economic benefits. Typically, companies that participate in later stages of the development process are able to retain a greater portion of the economic value attributable to the trait.

Competitive Landscape

The development of GM seed traits is concentrated in a limited number of large seed companies, including Monsanto, DuPont Pioneer, Syngenta, Limagrain, Dow AgroSciences, KWS SAAT, and Bayer CropScience. According to Phillips McDougall, the leading 11 seed and trait companies as a group invested $4.1 billion in seed and trait research and development in 2013. Many of these companies have programs that address both biotic and abiotic stress. Many of them also have extensive regulatory and commercialization capabilities and are able to take a trait from the gene discovery phase to commercialization on their own. Notwithstanding their in-house capabilities, many of these companies also regularly source traits from third parties.

A few small specialized biotechnology companies focus on the research and development of a select range of traits. These companies typically have limited development capabilities and do not have significant regulatory capabilities. They generally seek to partner with large seed companies, such as those identified above, in order to complete regulatory requirements for their technologies and bring products to market.

BUSINESS

Overview

We are a leading agricultural biotechnology trait development company with an extensive and diversified portfolio of late-stage crop productivity and product quality traits addressing multiple crops that supply the global food and feed markets. Our traits are focused on high-value enhancements that increase crop yields by enabling plants to more efficiently manage environmental and nutrient stresses, and that enhance the quality and value of agricultural products. Our traits increase value not only for farmers, but also for users of agricultural products. There currently are more than 50 products in development incorporating our traits and there are 13 in advanced stages of development or on the market.

Our crop productivity traits are being utilized by our commercial partners to develop higher yielding seeds for the most widely grown global crops, including wheat, rice, soybean, corn, and sugarcane, as well as for other crops such as cotton, canola, turf, and trees. Our business model positions us at the nexus of basic research and commercial product development, as we apply our strong product development and regulatory capabilities to collaborate with, and leverage the skills and investments of, upstream basic research institutions and downstream commercial partners. We believe our approach significantly reduces risk and capital requirements, while simplifying and expediting the product development process. We also believe that our collaboration strategy leverages our internal capabilities, enabling us to capture much higher value than would otherwise be the case, and enabling our commercial partners to develop and commercialize products more cost-effectively.

In recent decades, agricultural biotechnology has been a major driving force for improving farm economics by introducing genetically modified, or GM, seeds, with traits that reduce the cost of managing crop biotic stresses such as weeds, insects, and microbial pests. The first agricultural biotechnology traits, herbicide tolerance and insect resistance, were developed primarily by companies with deep expertise and a long heritage in crop protection chemistry and pest management. Seeds with these traits have achieved rapid growth and strong commercial success, reaching market share in excess of 90% in key crops and countries as of 2013.

We believe the next generation of advancements in agricultural biotechnology involves increasing yields by making crops which perform significantly better under a wide range of abiotic stresses, including drought, heat, salinity, and variable availability of key nutrients such as nitrogen. Our target market is the $39.4 billion global seed market. Our goal is to increase the value of this market significantly by increasing yields in the more than $1.0 trillion market for the five largest global crops, and to capture a portion of the increased value.

Our business model focuses on creating value by leveraging collaborator investments and capabilities upstream in basic research, and downstream in product development and commercialization. We bridge the gap between basic research and commercial development, reducing risk and adding value as a result. We reduce risk and avoid most of the costs associated with basic research by acquiring trait technologies that have already completed initial feasibility screening, thus achieving proof of concept, through basic research carried out elsewhere. We further develop these technologies by optimizing function and validating performance through intensive field trial testing in multiple crops. We then form collaborations with major seed and consumer product companies that develop and commercialize products incorporating our traits. In select instances, we also work with our commercial partners to make any regulatory filings required to support commercial launch of the trait in order to increase our share of the value created by the trait.

By licensing later stage de-risked technologies to our commercial partners, we expect to achieve significantly greater value than generally earned for access to early stage traits. Our license agreements typically include upfront and annual license fees, as well as multiple milestone payments for key

product development stages such as demonstration of greenhouse efficacy, demonstration of field efficacy, regulatory submission, regulatory approval, and commercial launch. Following commercialization of a product utilizing one or more of our traits, we share in the value of the traits realized by our commercial partners. We believe that this broad and balanced approach diversifies and reduces risk, allowing us to address multiple end markets through strong established channels.

There currently are more than 50 products in development incorporating our traits and there are 13 in advanced stages of development or on the market. We use both GM and non-GM technologies to develop our traits, which enables us to select the approach most suited for the particular trait, crop and market. Our agricultural productivity traits are designed to substantially increase crop yields and farmer income. They do so either by improving efficiency in the use of key inputs, such as fertilizer and water, or by increasing tolerance to environmental stresses, such as drought, heat and salinity. Our existing portfolio of agricultural productivity traits includes Nitrogen Use Efficiency, or NUE, Water Use Efficiency, or WUE, Drought Tolerance, Salinity Tolerance, Heat Tolerance, and Herbicide Tolerance. Field trial results have demonstrated significant yield improvements resulting from our agricultural productivity traits in multiple crops and geographies. As one example, field trials in multiple environments conducted by an independent testing organization with our NUE trait in rice resulted in a consistent yield improvement that on average was 27% above the controls over a three-year period from 2012 to 2014. Rice is the world's most valuable crop, with a harvest value of $334.4 billion in 2012, and the third most widely grown crop, according to the FAO. Our agricultural product quality traits increase the value of harvested products by improving specific compositional qualities of oilseeds and grains. These traits include Enhanced Nutrition Grains and High Value Nutritional Oils, including Sonova 400 GLA safflower oil and Sonova Ultra GLA safflower oil, which we refer to as our Sonova products.

We have formed strategic partnerships and developed strong relationships with global agricultural leaders for development and commercialization of our traits in major crops and consumer products. Our collaborators include subsidiaries or affiliates of Limagrain (Vilmorin & Cie), Mahyco (Maharashtra Hybrid Seeds Company Limited), DuPont Pioneer (E.I. du Pont de Nemours and Company), SES Vanderhave, Genective (a joint venture between Limagrain and KWS SAAT), Scotts, U.S. Sugar, Abbott, Ardent Mills, Bioceres, and others. Additionally, in order to increase our participation in the value of two major crops, wheat and soybean, we have formed two joint ventures. Limagrain Cereal Seeds LLC is our joint venture with Limagrain for the development and commercialization of wheat products for North America. Limagrain is the world's fourth-largest seed company. Verdeca LLC is our joint venture with Bioceres for the development and deregulation of soybean traits globally.

The strength of our internal capabilities and collaboration strategy enables us to quickly identify and develop valuable traits and bring them to market, as we have demonstrated through commercializing Sonova 400 GLA safflower oil in less than six years from technology acquisition to commercial launch. Sonova 400 GLA safflower oil is a key ingredient in multiple branded nutritional supplements marketed through GNC stores and other major U.S. retailers.

Our Strengths

We believe we are strategically positioned to capitalize on the need to increase crop yields and quality of agricultural products globally. Our competitive strengths include:

- ***We hold a competitive position in an attractive and fast-growing industry.*** According to Phillips McDougall, the GM seed market grew at an 18.4% CAGR between 2003 and 2013, reaching $20.1 billion, which represented 51% of the $39.4 billion total seed market. We believe that addressing opportunities to increase yield in the much larger market for agricultural products will dramatically expand the size of the GM seed market, and that we are well-positioned to

take advantage of this with our portfolio of late-stage, high-value traits, and our ability to reduce product development risk and leverage the capabilities of our licensees and partners. We believe the yield-enhancing benefits of our agricultural productivity traits provide significant value to farmers, based on field trials to date. As one example, field trials conducted by an independent testing organization with our NUE trait in rice resulted in a consistent yield improvement that on average was 27% above the controls over a three-year period from 2012 to 2014. We carefully select our collaborators and partners and license our traits to leading seed and consumer product companies. This allows us to leverage their substantial development capabilities and market presence, creating a highly scalable and capital light platform.

- ***We have a broad and diverse portfolio of products and partners.*** Our product portfolio consists of a wide variety of traits that are applicable to major crops in key geographic markets and address agricultural productivity and product quality. The applicability of our product portfolio to these major crops provides us access to multiple large end markets that we believe have demonstrated or have the potential for high growth, such as soybeans in North and South America and wheat and rice globally. We believe that our established relationships with multiple global agricultural and consumer product leaders, such as Limagrain, Mahyco, DuPont Pioneer, SES Vanderhave, Abbott, Ardent Mills, and others, improve our ability to monetize the benefits of our traits. Importantly, in most cases our technologies and traits are additive to, rather than competitive with, the efforts of our collaborators. As a result, we and our collaborators mutually benefit from a strong alignment of interests. Additionally, in order to add value by participating in the downstream value of two major crops, wheat and soybean, we have formed two joint ventures. Limagrain Cereal Seeds LLC is our joint venture with Limagrain for the development and commercialization of wheat products for North America. Verdeca LLC is our joint venture with Bioceres for the development and deregulation of soybean traits globally.

- ***The development stage of our products substantially reduces the risk and time to market.*** We reduce risk and avoid most of the costs associated with basic research by acquiring trait technologies that have already achieved proof of concept and have started Phase 2 of development through basic research carried out elsewhere. We then optimize and validate trait performance through intensive field trials in multiple crops, and license the further de-risked traits to selected collaborators globally. The majority of the products being developed with our traits, including those based on NUE and WUE trait technologies, are in Phase 2, Phase 3 or later stages of development. The efficacy of these traits has been demonstrated through field testing over multiple years in a variety of major crops. According to the Monsanto 2011 Investor Toolkit, products in Phase 2 and Phase 3 of development have a 50% and 75% probability of reaching commercialization, respectively. Commercial launch of the first seed products containing our proprietary agricultural productivity traits is expected within the next few years.

- ***We have demonstrated independent product development and regulatory capabilities.*** Our execution risk is significantly reduced by our in-house scientific and product development expertise, which affords us substantial control over the product development process. Our regulatory expertise enables us to capture additional value in selected instances, and also to expedite the development of products containing our traits. For example, we independently developed and commercialized our first commercial product, Sonova 400 GLA safflower oil, in less than six years from technology acquisition. This is significantly less than the 13 years it takes, on average, to commercialize a seed using advanced breeding or biotechnology, according to Phillips McDougall. Our regulatory team's expertise in bringing traits through the regulatory process quickly and cost-effectively is a key differentiating factor. For example, by working closely with federal and state regulatory authorities, we have designed and implemented robust protocols for conducting field trials in California with GM rice. To our knowledge, we are the only company currently permitted to conduct such trials. Coupled with strong in-house intellectual property law

expertise, our technology development process has resulted in a portfolio of over 100 issued patents that are either owned or exclusively controlled by us.

- ***We have a seasoned executive team with a diverse blend of technical and commercial experience.*** Our executive team has more than 140 years of combined experience specific to agricultural biotechnology, including management of research, regulatory matters, business development, product commercialization, finance and intellectual property. Several members of our executive team previously worked at Calgene and Monsanto, and all seven executive team members have worked together for nearly ten years. Our executive team has a strong track record of acquiring and developing valuable trait technologies and forging sustainable partnerships, and has raised more than $100 million in capital for our company since inception. Our scientific advisory board brings substantial, relevant experience in the analysis, research and development, regulatory review, and commercialization of next generation seed traits.

Our Growth Strategy

We believe that there are significant opportunities to grow our business globally by executing the following elements of our strategy:

- ***Accelerate and broaden the commercialization of our high-impact agricultural productivity traits.*** One of our highest priorities is to accelerate and broaden the commercialization of our key agricultural productivity traits, such as NUE, WUE, and Drought Tolerance, that are in advanced stages of development with our commercial partners and joint ventures. We intend to do this by working with our collaborators to expand the scope of development activities and execute against predetermined technical and regulatory milestones in our joint work plans.

- ***Increase the value we capture in selected crops by managing and investing in the regulatory process.*** For certain crops, including wheat, soybean, cotton, and sugar beets, we have the opportunity to invest incrementally in the management of regulatory activities. By doing so, we will increase our share of the trait value from a base range of 15 to 20% to a range of 37 to 50%, depending on the specific crop and trait. We believe that investment in the regulatory process is highly de-risked because it occurs after clear evidence of trait efficacy has been demonstrated and, as a result, will bring highly favorable economic returns.

- ***Execute on a range of near-term opportunities in areas that we believe will be materially beneficial.*** In addition to developing agricultural productivity traits for major global crops, we develop such traits for secondary crops, and also develop product quality traits. Our product quality trait programs, including specialty oils and improved grains, provide opportunities for near-term revenue growth. In particular, our programs for ARA oil and resistant starch wheat are at advanced development stages and we intend to accelerate our efforts in these programs.

- ***Continue to build our pipeline of next generation and innovative traits.*** We maintain strong relationships with leading basic research institutions and other industry participants, and will continue to partner with them to gain access to new traits and technologies with demonstrated efficacy. Our independence, broad technical product development, and regulatory expertise position us to collaborate effectively with parties throughout the value chain to reduce risk and leverage the resources. We have a strong track record of working effectively and transparently with third parties and are a sought-after partner for independent trait development and regulatory work. We believe that opportunities exist to expand such relationships in the future.

- ***Continue to invest in our human resources and technology infrastructure on a global basis.*** Our highly-skilled and technical employees are critical to our success, and we will continue to invest in development and retention in order to build upon this strength. We will continue to invest in

best-in-class technology and research and development capabilities that will enable us to continue advancing our position in the agricultural biotechnology marketplace.

Our Products and Product Development Pipeline

There currently are more than 50 products in development incorporating our traits and there are 13 in advanced stages of development or on the market. We use both GM and non-GM technologies to develop our traits, which enables us to select the approach most suited for the particular trait, crop, and market. Our agricultural productivity traits are designed to substantially increase crop yields and farmer income. They do so either by improving efficiency in the use of key inputs, such as fertilizer and water, or by increasing tolerance to environmental stresses, such as drought, heat, and salinity. Our existing portfolio of agricultural productivity traits includes NUE, WUE, Drought Tolerance, Salinity Tolerance, Heat Tolerance, and Herbicide Tolerance as further described below. Our traits are developed as individual offerings and as stacks that incorporate several different traits, and can be designed for use in a variety of crops and end markets.

The following table summarizes our current commercial product and our pipeline of products in development.

Program	Crop	Collaborator(s)	Phase	Key Markets
PRODUCTIVITY TRAITS				
Nitrogen Use Efficiency (NUE)	Wheat	Limagrain, Mahyco, CSIRO, ACPFG	D 1 2 3	Global
	Rice	Mahyco, AATF	D 1 2 3	Asia
	Soybean	Verdeca	D 1	Americas, Asia
	Corn	-	D 1	Global
	Cotton	Mahyco	D 1 2	Americas, Asia
	Canola	-	D 1 2 3	N. America, Asia
	Sugarcane	US Sugar, SASRI, Mahyco	D 1 2	S. America, Asia
	Sorghum	-	D 1 2	N. America, India, Africa
	Barley	-	D 1 2 3	N. America
	Turf	Scotts	D 1 2	N. America
	Tree Crops	Arborgen, Futuragene	D 1	Brazil, N. America
	Sugar Beets	SES Vanderhave	D 1 2	N. America
	Vegetables	Mahyco	D 1	Asia
Water Use Efficiency (WUE) Drought Tolerance (DT)				
	Wheat (WUE)	Limagrain	D 1 2	Global
	Wheat (DT)	Bioceres	D 1 2 3	Global
	Rice (WUE)	Mahyco	D 1 2	Asia
	Soybean (DT)	Verdeca	D 1 2 3 4	Americas, Asia
	Corn (WUE)	Genective	D 1	Global
	Cotton (WUE)	Mahyco	D 1 2	Americas, Asia
	Canola (WUE)	-	D 1 2	N. America, Asia
	Sugarcane (WUE)	US Sugar, SASRI, Mahyco	D 1	S. America, Asia
	Sorghum (WUE)	-	D 1 2	N. America, India, Africa
	Sugar Beets	SES Vanderhave	D 1	N. America
	Tree Crops (WUE)	Arborgen, Futuragene	D 1 2	Brazil, N. America
	Vegetables (WUE)	Mahyco	D 1	Asia
Salinity Tolerance (ST)	Wheat	Mahyco	D 1 2	Global
	Rice	Mahyco	D 1 2 3	Asia
	Cotton	Mahyco	D 1 2	Americas, Asia
	Canola	Mahyco	D 1	N. America, Asia
	Sugarcane	Mahyco	D 1	S. America, Asia
	Sorghum	-	D 1	N. America, India, Africa
	Vegetables	Mahyco	D 1	Asia
Herbicide Tolerance*	Wheat	Confidential	D 1 2 3	Global
Heat Tolerance	Wheat	USAID, CIMMYT	D	Global
Trait Stacks				
NUE/WUE/ST	Rice	AATF	D 1 2 3	Asia
NUE/DT	Wheat	Bioceres	D 1 2	Global
NUE/WUE	Wheat	Limagrain	D 1 2	Global
NUE/WUE	Canola	-	D 1 2	N. America, Asia
PRODUCT QUALITY TRAITS				
GLA Oil	Safflower	Abbott	D 1 2 3 4 5	N. America, Asia
Resistant Starch*	Wheat	-	D 1 2 3 4	Global
Post Harvest Quality*	Tomato	Bioseed	D 1 2 3	Asia, N. America
ARA Oil	Safflower	Abbott, DuPont Pioneer	D 1 2 3	N. America, Asia
Grain Quality*	Wheat	Ardent Mills	D 1 2	Global
Low Gluten*	Wheat	-	D	Global

Phase: D=Discovery; 1=Proof of Concept; 2=Greenhouse / Early Field Trials; 3=Additional Field Trials / Product Development; 4=Regulatory / Pre-Commercial; 5=Commercialized
* Non GM

Agricultural Productivity Traits

Nitrogen Use Efficiency (NUE)

Our NUE technology enables plants to absorb and utilize nitrogen fertilizer much more efficiently than conventional plants. This allows crops to achieve significantly higher yields under normally applied levels of nitrogen fertilizer, or to achieve the same yields as conventional crops while using 30 to 50% less nitrogen fertilizer.

Nitrogen fertilizer is a primary plant nutrient and key driver of crop yield. Nitrogen fertilizer is a significant component of crop production cost and was a $104.6 billion product within the $183.3 billion market for all fertilizers in 2012, according to an industry-specific report by MarketLine. Research published in Plant Biotechnology Journal reported that only 30 to 50% of added nitrogen fertilizer is taken up by agricultural crops, with the remainder left unutilized and potentially becoming a significant environmental pollutant.

Our NUE technology was originally discovered at the University of Alberta (Canada) and we hold an exclusive, global license to the technology for use in all crops, with unlimited sublicense rights. The first commercialization of crops with NUE technology is planned to occur within the next three to five years.

The target crops and markets for NUE include all major agricultural crops and markets. Our NUE technology has now been incorporated, or is under development by our commercial partners, in major global crops, including rice, wheat, soybean, cotton, canola, sugar beets, sugarcane, vegetables, turf grass, and multiple forestry species. Specific crops, collaborators, stages of development, and target markets for our NUE technology are shown in the following table.

Program	Crop	Collaborator(s)	Phase						Key Markets
			D	1	2	3	4	5	
Nitrogen Use Efficiency (NUE)	Wheat	Limagrain, Mahyco, CSIRO, ACPFG	■	■	■	■			Global
	Rice	Mahyco, AATF	■	■	■	■			Asia
	Soybean	Verdeca	■	■					Americas, Asia
	Corn	-	■	■					Global
	Cotton	Mahyco	■	■	■				Americas, Asia
	Canola	-	■	■	■	■			N. America, Asia
	Sugarcane	US Sugar, SASRI, Mahyco	■	■	■				S. America, Asia
	Sorghum	-	■	■	■				N. America, India, Africa
	Barley	-	■	■	■	■			N. America, Australia
	Turf	Scotts	■	■	■				N. America
	Tree Crops	Arborgen, Futuragene	■	■					Brazil, N. America
	Sugar Beets	SES Vanderhave	■	■	■				N. America
	Vegetables	Mahyco	■	■					Asia

Phase: D=Discovery; 1=Proof of Concept; 2=Greenhouse / Early Field Trials; 3=Additional Field Trials / Product Development; 4=Regulatory / Pre-Commercial; 5=Commercialized
* Non GM

Field trial data to date in multiple major commodity crops has shown yield improvements attributable to our NUE trait of greater than 10%. For example, the International Center for Tropical Agriculture, or CIAT, an independent research organization, has conducted field trials of NUE in a major type of rice for three years (2012, 2013, and 2014) under both lowland (flood irrigated) and upland (rain irrigated) locations. Of the six NUE rice lines tested, two consistently showed significant yield benefits across all field trials and treatments. The leading line out-yielded the control by an average of 27% over three years for the two locations and for three rates of nitrogen fertilizer in the

lowland location. The table below summarizes the average yield increase over three years, relative to the control, for the two lead lines, as reported by CIAT.

NUE Rice Field Trial Results 2012-2014 (increase in grain yield)

Production Environment	Nitrogen Application Rate (% of normally applied N)	NUE Rice vs. Control #1 (% yield increase)	NUE Rice vs. Control #2 (% yield increase)	NUE Rice Mean (% yield increase)
Lowland	0%	25%	24%	**25%**
	50%	23%	29%	**26%**
	100%	26%	25%	**25%**
Upland	50%	27%	34%	**30%**
	Mean	**25%**	**28%**	**27%**

We have also created a methodology to quantify and document changes in greenhouse gas emissions resulting from changes in nitrogen use. This methodology, approved by the Intergovernmental Panel on Climate Change in 2012, is the first of its kind to link crop genetics with carbon emissions. We believe this may encourage the adoption of crops with NUE technology by enabling farmers to further increase revenue through the sale of carbon credits.

Water Use Efficiency (WUE)/Drought Tolerance

Our WUE trait technology enables plants to better tolerate two distinct types of stress: reduced or inconsistent water and severe drought. The WUE trait has been demonstrated to improve crop yield under conditions of episodic water stress and to help crops recover from severe drought conditions. A related but distinct technology, Drought Tolerance, helps plants maintain yields under conditions of prolonged water stress.

In 2012, the United Nations Educational, Scientific, and Cultural Organization, or UNESCO, reported that modern agriculture is highly water intensive, using approximately 70% of world water withdrawals. UNESCO also estimates that future global agricultural water consumption will increase by about 19% by 2050 and could be even higher if crop yields and the efficiency of agricultural production do not improve dramatically. The irregular availability of suitable water is one the leading causes of reduced crop productivity globally. Loss due to drought in the United States, as reported to the USDA Risk Management Agency, averaged $4.7 billion over the past five years and was $12.9 billion in 2012. Water-limiting conditions can result from prolonged drought, leading to severe reductions in crop yields, or can result from periodic dry conditions, leading to reduced crop yields. Whenever water limitations occur, economic losses, and impairment of the food supply result.

Our WUE trait technology was jointly discovered by researchers at the University of California, Davis and Technion—Israel Institute of Technology. We hold an exclusive, global license to the technology, with sublicense rights, for use in all crops. Target crop markets for WUE technology include most major crops, such as rice, wheat, corn, soybean, sugarcane, cotton, and canola. Target geographies are global, based on regions where water availability can limit productivity in the target crops. Our Drought Tolerance technology was discovered by researchers at National Scientific and Technical Research Council (Argentina), and further developed by Bioceres, S.A. We hold an exclusive license to this technology for use in wheat globally outside of South America. Verdeca, our joint venture with Bioceres, Inc., holds exclusive global rights and is developing and commercializing this technology in soybeans.

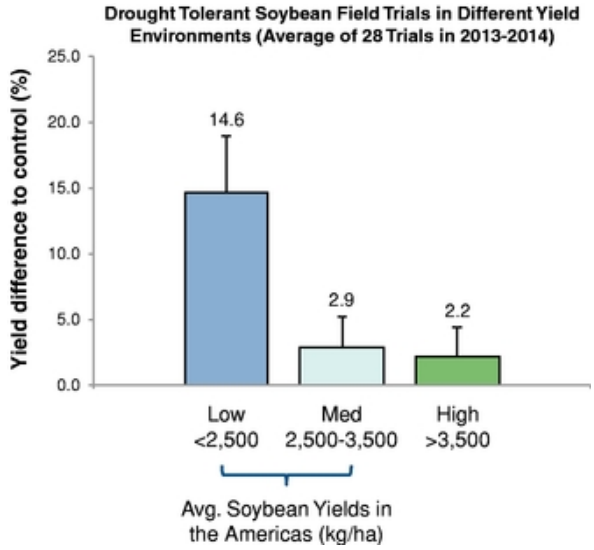
Our WUE technology has now been incorporated, or is under development by our commercial partners, in major global and secondary crops, including those shown in the following table. Our Drought Tolerance technology is being applied in wheat, and soybeans with this technology are in the

regulatory approval process in Argentina. Specific crops, collaborators, stages of development, and target markets for our WUE and Drought Tolerance technologies are shown in the following table.

Program	Crop	Collaborator(s)	Phase	Key Markets
Water Use Efficiency (WUE) Drought Tolerance (DT)	Wheat (WUE)	Limagrain	D 1 2	Global
	Wheat (DT)	Bioceres	D 1 2 3	Global
	Rice (WUE)	Mahyco	D 1 2	Asia
	Soybean (DT)	Verdeca	D 1 2 3 4	Americas, Asia
	Corn (WUE)	Genective	D 1	Global
	Cotton (WUE)	Mahyco	D 1 2	Americas, Asia
	Canola (WUE)	-	D 1 2	N. America, Asia
	Sugarcane (WUE)	US Sugar, SASRI, Mahyco	D 1	S. America, Asia
	Sorghum (WUE)	-	D 1	N. America, India, Africa
	Sugar Beets	SES Vanderhave	D 1	N. America
	Tree Crops (WUE)	Arborgen, Futuragene	D 1 2	Brazil, N. America
	Vegetables (WUE)	Mahyco	D 1	Asia

Phase: D=Discovery; 1=Proof of Concept; 2=Greenhouse / Early Field Trials; 3=Additional Field Trials / Product Development; 4=Regulatory / Pre-Commercial; 5=Commercialized

Greenhouse and field trials of our WUE traits have been completed in agronomic crops such as rice, cotton, peanuts and alfalfa. We are currently working with collaborators in additional crops, including wheat, sugar beets, sugarcane, and multiple tree species. Recent collaborator results in rice show significant yield improvement under water-limited conditions. Our Drought Tolerance technology is most advanced in soybeans under our Verdeca joint venture. Multiple seasons of field trials under reduced yield conditions that represent the average yield of soybean production in North and South America have shown yield improvements relative to controls of up to 14%, with no decrease in yield under optimal conditions, as illustrated in the following chart.



Salinity Tolerance

Our Salinity Tolerance trait allows plants to produce increased yields under conditions of elevated salinity and is applicable to a wide range of crops, including wheat, rice, soybean, cotton, and vegetables. Our salt-tolerant plants have also been demonstrated to bind excess salt from the soil into the plant, potentially providing the benefit of rehabilitating salinized land over time.

The global cost of lost crop productivity to salt-induced land degradation is estimated to be $27.3 billion according to the United Nations Natural Resources Forum. Of the current 230.0 million hectares of irrigated land, 45.0 million hectares, or about 20%, are salt-affected. Crops grown under salt-affected conditions may be inhibited in two ways. First, the presence of salt in the soil reduces the ability of the plant to take up water, leading to reductions in growth rate. Second, if excessive amounts of salt enter the plant, there can be injury to the cells, which may cause further reductions in growth. Modern agriculture is highly water intensive and the ability to manage crops in saline environments will reduce agricultural demand on critical fresh water supplies.

Our most advanced Salinity Tolerance trait technology is being developed based on basic research conducted at the University of Toronto, the University of California, Davis, and the National Institute of Agrobiological Sciences (Japan), all of which have granted us exclusive licenses for all crops. We are conducting early stage research on additional salinity tolerance genes under a research funded agreement with the United States Agency for International Development, or USAID.

Target markets for the Salinity Tolerance trait are those areas where water or soil salinity decrease crop yield. Such areas occur globally where irrigation is prevalent, where ground water supplies are salinized due to seawater intrusion, and where soils are salinized due to mineral deposits. Such areas are common in North America, India, China, additional countries in Asia, Australia, and other major crop production countries. Our Salinity Tolerance trait has been licensed to partners for use in rice, wheat, corn, cotton, canola, sugarcane, and vegetable crops. Specific crops, collaborators, stages of development, and target markets for our Salinity Tolerance technologies are shown in the following table.

Program	Crop	Collaborator(s)	Phase	Key Markets
Salinity Tolerance (ST)	Wheat	Mahyco	D 1 2	Global
	Rice	Mahyco	D 1 2 3	Asia
	Cotton	Mahyco	D 1 2	Americas, Asia
	Canola	Mahyco	D 1	N. America, Asia
	Sugarcane	Mahyco	D 1	S. America, Asia
	Sorghum	-	D 1	N. America, India, Africa
	Vegetables	Mahyco	D 1	Asia

Phase: D=Discovery; 1=Proof of Concept; 2=Greenhouse / Early Field Trials; 3=Additional Field Trials / Product Development; 4=Regulatory / Pre-Commercial; 5=Commercialized

Development in rice and wheat is the most advanced of these crops, and our collaborators have reported successful trials showing yield increases over control varieties of more than 46% in rice, and up to 36% in wheat, under conditions of salinity stress, as shown in the following charts.

Salinity Tolerant Rice Line	Yield increase over control under salinity stress (%)
A	20%
B	15%
C	16%
D	25%
E	46%
F	10%
Mean	**22%**

Commercial partner field trial in 2012

Salinity Tolerant Wheat Line	Yield increase over control under salinity stress (%)
A	33%
B	17%
C	36%
Mean	**29%**

Commercial partner greenhouse test in 2013 - 2014 growing season

Heat Tolerance

Our Heat Tolerance technology program is carrying out discovery research funded by USAID in collaboration with the International Maize and Wheat Improvement Center, or CIMMYT, and the Indian National Bureau of Plant Genetic Resources, or NBPGR. Our work targets metabolic approaches to reduce the heat sensitivity of starch synthesis in wheat and increase membrane thermostability. We are pyramiding the CIMMYT-identified natural genetic diversity that affects membrane thermostability and induced genetic diversity in starch synthesis, developed by us, in order to improve wheat heat adaptation in a fundamental way.

Among major staple crops, global wheat yields may be the most impacted by climate change, according to a number of climate change models. And while wheat is the most drought-adapted of major crops, improving heat adaptation would make wheat a climate resilient staple. Developing countries are both significant producers and importers of wheat. According to CIMMYT, an estimated 1.2 billion poor people depend on wheat and 81% of wheat in the developing world is produced and consumed in the same country. At the same time, wheat accounts for 43% of food imports in developing countries, underscoring the importance of global wheat trade to food security. CIMMYT estimates that demand for wheat will increase by 60% by 2050 in developing countries. As we saw with the global food price crisis in 2008, poor yields in major wheat exporting countries such as Australia can have a significant impact on global prices.

Wheat has been shown to lose three to four percent of yield per degree Celsius above the optimum daytime temperature of 15° C. Since the 1980s, global wheat productivity is estimated to have been reduced by as much as five percent due to increasing temperature, and wheat yields in South Asia could decline about 50% by 2050. Recent research in India suggests that most crop models have underestimated the impact of extreme heat on yield losses by as much as 50%.

This technology is being developed in collaboration with CIMMYT and NBPGR, under funding provided by USAID and is currently in the discovery stage. The initial target crop for this technology is wheat, where the impacts from heat stress are among the most severe of all major crops. Target commercial geographies are global. It is expected that discoveries under this program are likely to lead to improvements in heat stability of major crops other than wheat as well.

Program	Crop	Collaborator(s)	Phase	Key Markets
			D 1 2 3 4 5	
Heat Tolerance	Wheat	USAID, CIMMYT	■	Global

Phase: D=Discovery; 1=Proof of Concept; 2=Greenhouse / Early Field Trials; 3=Additional Field Trials / Product Development; 4=Regulatory / Pre-Commercial; 5=Commercialized

Herbicide Tolerance

Our Herbicide Tolerance program is currently focused on wheat and we have developed a non-GM source of tolerance to glyphosate, a widely used non-selective herbicide. We believe that the discoveries under this program are likely to result in similar opportunities in other major crops.

According to ISAAA, from 1996 to 2013, herbicide tolerant crops consistently occupied the largest planting area of biotech crops. In 2013 alone, herbicide tolerant crops occupied 99.4 million hectares, or 57%, of the 175.2 million hectares of biotech crops planted globally. For the first 17 years of commercialization (1996 to 2012), benefits from herbicide tolerant crops were valued at $47.7 billion, which accounted for 41% of global biotech crop value. For 2012 alone, herbicide tolerant crops were valued at $6.6 billion or 35% of global biotech crop value.

Our Herbicide Tolerance technology is in Phase 3 of development and was developed using our proprietary non-GM research platform, TILLING, which enabled us to find and further develop valuable rare genes within our wheat genetic diversity collection. This work is fully funded by a collaborator who has the option to obtain a non-exclusive commercial license to this trait in certain countries. We retain the right to further license this technology to additional collaborators in global wheat markets.

Testing results to date show clear tolerance in multiple wheat lines to levels of glyphosate herbicide, which may be sufficient to control many weed species in wheat production. Individual glyphosate tolerant wheat lines are being combined via plant breeding to combine sources of tolerance and create products with increasing levels of tolerance.

Phase: D=Discovery; 1=Proof of Concept; 2=Greenhouse / Early Field Trials; 3=Additional Field Trials / Product Development; 4=Regulatory / Pre-Commercial; 5=Commercialized
* Non GM

Agronomic Trait Stacks

Trait stacks are combinations of multiple individual traits. Trait stacks can be made by using conventional plant breeding to cross plants with different traits, and can also be made by combining multiple traits in a molecular stack that is then inserted into a target crop. Our collaborators are generally allowed to combine multiple traits of ours either by breeding or molecular stacks. Deep portfolios of agronomic stress tolerance traits are rare in the industry, and the ability to pyramid multiples of such traits is even rarer. In order to validate the efficacy of particular trait stacks, we carry out our own research and field trials.

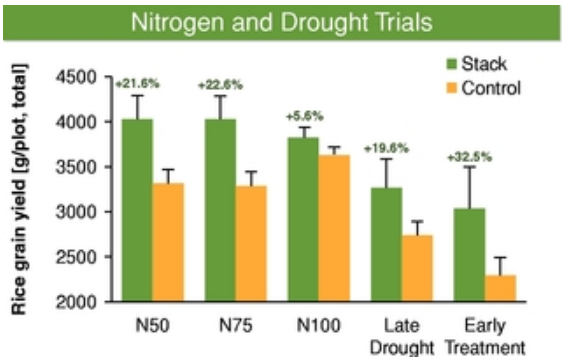
We have developed three molecular trait stacks, and have field-tested them in example crops, as shown in the table below. Efficacy of a trait stack in one crop suggests the probability that the stack will also work in other key crops. For example, our NUE and WUE trait stack is in Phase 2 of development for both wheat and canola and functions in both. The history of single traits functioning in multiple crops, along with the evidence of stacked traits working in more than one crop, suggest that

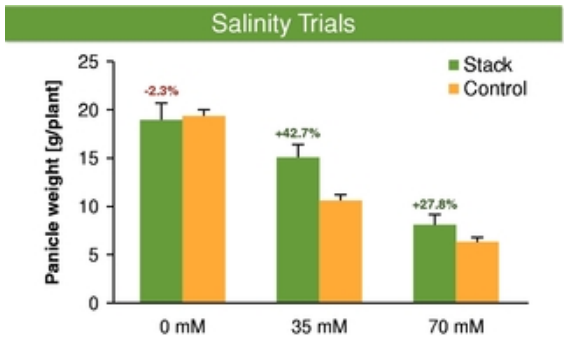
stacked traits are likely to function in multiple crops. Thus, we believe that our trait stacks have market opportunities well beyond the specific demonstration crops and geographies shown in the table.

Program	Crop	Collaborator(s)	Phase D	1	2	3	4	5	Key Markets
TRAIT STACKS									
NUE/WUE/ST	Rice	AATF	■	■	■	■			Asia
NUE/DT	Wheat	Bioceres	■	■	■				Global
NUE/WUE	Wheat	Limagrain	■	■	■				Global
NUE/WUE	Canola	-	■	■	■				N. America, Asia

Phase: D=Discovery; 1=Proof of Concept; 2=Greenhouse / Early Field Trials; 3=Additional Field Trials / Product Development; 4=Regulatory / Pre-Commercial; 5=Commercialized

Our most advanced and tested trait stack—the combination of NUE, WUE, and Salinity Tolerance—has been field tested in rice over multiple seasons. We have tested this trait stack under varying levels of nitrogen, water availability, and salinity. Rice plants with this stack out-yielded control plants by five to 22% under different levels of nitrogen fertilizer, by 19 to 32% under different types of water stress, and by 27 to 42% under high salinity conditions. The table below summarizes the results from a field trial conducted by us in 2012, with similar results obtained in a field trial conducted in 2013.





Agricultural Product Quality Traits

Gamma Linolenic Acid (GLA) Oil

Under the license agreement we have with Abbott, we developed a new source of vegetable oil with very high levels of the fatty acid gamma linolenic acid (GLA). Our GLA safflower oil product has the highest concentration of GLA available in any plant oil at 65%; conventional plant oils range from 10 to 22% GLA. We sell the oil to manufacturers of nutritional supplements, medical foods, and other products.

GLA has multiple clinically-demonstrated nutritional and medical benefits, including anti-inflammation, improved skin condition, and healthy weight management. Multiple parties had expressed commercial interest in incorporating an enhanced GLA oil into their food and medical products, where conventional sources of GLA are not sufficiently concentrated to deliver amounts that are cost and performance effective.

Against a commercial target of 40% GLA concentration, we developed, deregulated, and commercialized GLA safflower oil containing up to 65% GLA concentration in less than six years. This is significantly less than the 13 years it takes, on average, to commercialize a seed using advanced breeding or biotechnology, according to Phillips McDougall.

We produce GLA safflower oil by contracting with farmers in Idaho and process the seed under contract with a manufacturer in California to make refined oil. We sell GLA safflower oil under the brand name Sonova with multiple concentrations and formulations. Our markets are nutritional supplements, medical foods, and pet foods. Our key customers include significant participants in those markets, such as GNC, Lindora Nutrition, and others.

Program	Crop	Collaborator(s)	Phase	Key Markets
			D 1 2 3 4 5	
GLA Oil	Safflower	Abbott		N. America, Asia

Phase: D=Discovery; 1=Proof of Concept; 2=Greenhouse / Early Field Trials; 3=Additional Field Trials / Product Development; 4=Regulatory / Pre-Commercial; 5=Commercialized

Arachidonic Acid (ARA) Oil

Our Arachidonic Acid (ARA) Oil has high levels of the fatty acid ARA, which is a key ingredient in infant nutrition products, where it provides benefits such as fostering infant eye and brain development. We estimate the global market for ARA at $160 million and believe that our ARA product will cost significantly less than currently available sources of ARA.

Our ARA Oil is being developed under agreements with Abbott and DuPont Pioneer, each of which licensed intellectual property to us for this program. In exchange for licenses to intellectual property, these agreements provide product access rights to Abbott and DuPont Pioneer, as well as certain royalty payments on product sales to third parties.

Our ARA Oil is in Phase 3 of development. We have multiple safflower lines with oil compositions that offers the opportunity of being a direct replacement for current sources of ARA in infant nutrition products.

Program	Crop	Collaborator(s)	Phase	Key Markets
			D 1 2 3 4 5	
ARA Oil	Safflower	Abbott, DuPont Pioneer		N. America, Asia

Phase: D=Discovery; 1=Proof of Concept; 2=Greenhouse / Early Field Trials; 3=Additional Field Trials / Product Development; 4=Regulatory / Pre-Commercial; 5=Commercialized

Enhanced Quality Grains

We have multiple programs aimed at developing wheat and other small grains with improved nutritional qualities. One such program generated bread and pasta wheat lines with high levels of resistant starch. Resistant starch increases the fiber content of wheat and reduces glycemic index, which are both desirable nutritional qualities. A second program increases specific quality targets in wheat, and is funded by Ardent Mills, which combines the operations of ConAgra Mills and Horizon Milling, a Cargill-CHS joint venture. A third program, funded by the National Institutes of Health, or NIH, is aimed at reducing gluten in wheat and other grains. All three of these programs utilize our proprietary TILLING platform, and resulting products are non-GM.

Our resistant starch wheat provides a source of wheat with inherently high levels of resistant starch, increasing the fiber content of the food product without the need for additives from other sources such as corn, potato and cassava. Resistant starch is a key product in two market segments: dietary fiber additives and modified starch additives. According to MarketsandMarkets, the fiber additives market was estimated to be $2.2 billion in 2013 and the modified starch market was estimated to be $12.8 billion in 2012. Major growth in these markets is being driven by the convenience health food sector and functional foods. Flour from the resistant starch wheat lines has been tested in bread and pasta applications with favorable ratings and is being tested in additional bakery products with

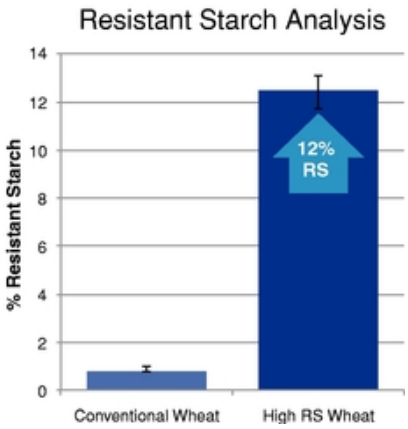
industrial partners. We have a range of potential products that are being evaluated for the optimal product quality and agronomic characteristics.

The gluten-free market was estimated to be $486.5 million in 2013 by Euromonitor. This figure only includes products that have been formulated to replace wheat flour and does not include products that are naturally gluten free or have undergone minor formulation changes. Consumers in this market are composed of people with celiac disease (approximately 1% of the population), people with non-celiac gluten intolerance (approximately 6% of the population) and people who choose to eat less gluten because they are in households with individuals with a gluten-free diet or choose to eat gluten-free food. Our wheat with reduced gluten will provide options for wheat products in the low gluten product category and additional options for blending wheat flour to meet the U.S. Food and Drug Administration, or FDA, standard for gluten-free products.

Program	Crop	Collaborator(s)	Phase	Key Markets
Resistant Starch*	Wheat	-	D 1 2 3 4 5	Global
Grain Quality*	Wheat	Ardent Mills	D 1 2	Global
Low Gluten*	Wheat	-	D 1	Global

Phase: D=Discovery; 1=Proof of Concept; 2=Greenhouse / Early Field Trials; 3=Additional Field Trials / Product Development; 4=Regulatory / Pre-Commercial; 5=Commercialized
* Non GM

Our Resistant Starch Wheat program has achieved significant increases in the resistant starch content of both bread and pasta wheat types. Results for bread wheat are shown in the following graph.



Postharvest Quality

Our postharvest quality program for tomatoes has resulted in tomato lines with significantly increased postharvest storage life. These tomato lines were developed using our proprietary TILLING platform and are non-GM. Our early research program was funded by the U.S. Department of Defense, due to their interest in being able to procure quantities of fresh fruit with extended storage life for deployment on board ships and submarines and overseas. The global market for fresh tomatoes is estimated by the FAO at $84.5 billion per year. Our initial collaborator for this product is Bioseed, a

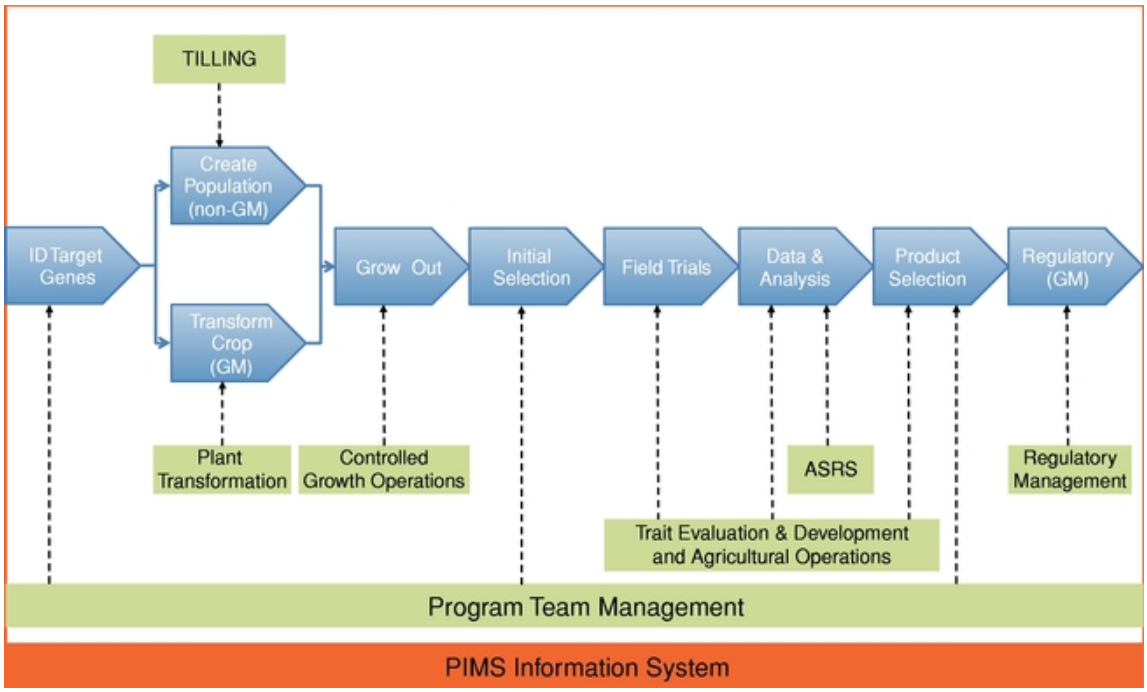
vegetable seed company based in India, and the product is in Phase 4 of development. Additional collaborations in North America are in development.

Program	Crop	Collaborator(s)	Phase D 1 2 3 4 5	Key Markets
Post Harvest Quality*	Tomato	Bioseed		Asia, N. America

Phase: D=Discovery; 1=Proof of Concept; 2=Greenhouse / Early Field Trials; 3=Additional Field Trials / Product Development; 4=Regulatory / Pre-Commercial; 5=Commercialized
* Non GM

Our Product Development Capabilities

The diagram below illustrates the key steps in our technology identification and product development process.



Identification of New Technology Programs

Because our business model is based on leveraging upstream investment in basic research to expand our product development pipeline, we actively seek out and participate in collaborative programs with external partners for the early-stage exploration and identification of promising plant technologies, particularly those related to abiotic stress tolerance in plants. The results of these collaborations directly feed innovation and often drive the progress of our ongoing programs. Some of these key early-stage collaborations include programs with the Center of Excellence in Plant Cell Walls (Australia), the University of Adelaide (Australia), CIMMYT (Mexico), the University of California, Davis (United States), Tulane University (United States), the University of California, Berkeley (United States), the International Center for Research in Semi-Arid Tropics (Columbia), the Bangladesh Rice Research Institute (Bangladesh), and ICABIOGRAD (Indonesia). Many of these collaborative programs are funded by U.S. government grants that we have secured either ourselves or in connection with our collaboration partners, including grants by the USAID, the NIH, the National Science Foundation, and the USDA.

Other early-stage technologies are introduced to us by commercial entities engaged in basic research who may be seeking to partner with us to advance their discoveries to further validation and product development. In some cases, such commercial entities are technology start-ups, and in other cases they include some of the largest companies involved in agricultural and food technology research.

We have a formal team and process for evaluating new technology opportunities. This team has multi-disciplinary membership, and reviews promising new technologies with regard to mission fit, scientific feasibility, intellectual property, business opportunity, and other considerations. Generally, we accept less than 10% of the potential opportunities we evaluate. Once a promising new trait technology has been accepted, we negotiate an agreement with the technology provider that, at a minimum, enables us to further evaluate the technology for a suitable period of time, or, in some cases, secures rights that enable full research and commercial exploitation of the technology.

Technology Evaluation

Our technology program teams include multiple Ph.D.-level scientists who are leaders in their respective fields. These teams contribute to the initial evaluation of new technologies and are responsible for development of technologies brought onboard. Each of our technology programs involves multiple gene, trait, and crop targets, and our process focuses on rapid development of the most promising combinations. In the development of any particular technology, we carry out a series of steps including the direct evaluation of target gene function, and the specific evaluation of results in key representative crop species. While common core scientific services are provided by specialized groups, the technology program team manages overall progress and remains directly involved throughout the development cycle, including by providing scientific and development support to our collaborators.

GM and Non-GM Product Development Platforms

Transformation—GM Traits. For projects involving GM traits, the genetic construct for insertion into plants is designed and built by the relevant program team, and then the gene transfer step is accomplished by our plant transformation functional group. This group consists of six members with more than 100 years of combined experience in plant transformation. The group has developed a complete physical and methodological infrastructure at our laboratory facility in Davis, California, to efficiently transfer genetic materials into key crop species. Our plant transformation team has demonstrated transformation capabilities in all primary and some secondary agricultural crops, including rice (japonica, indica, and NERICA types), wheat, corn, canola, cotton, soybean, safflower, barley, sorghum, alfalfa, tomato, and grapes.

Targeting Induced Local Lesions in Genomes (TILLING)—Non-GM Traits. Our proprietary TILLING platform enables us to develop value-added crops without the use of GM methods. The TILLING platform is primarily managed by a dedicated team of scientists at our laboratory in Seattle, Washington. TILLING technology was originally invented by a member of our science team and utilizes specialized laboratory equipment to carry out high-throughput allele screening of DNA samples from genetic diversity populations created in major crops. Our populations include wheat, rice, soybean, canola, tomato, and lettuce. These populations include numerous native and induced gene function alterations, which can be discovered and exploited rapidly at low cost and with minimal regulatory requirements. While the TILLING approach is also practiced elsewhere, we believe that the combination of our specialized background in the technology, highly refined skills in developing and screening genetic diversity plant populations, and proprietary TILLING software makes us the leader in commercial applications of TILLING.

Controlled Growth Operation. Our controlled growth operations group manages our growth chamber facility, where plants transitioning out of the plant transformation group are grown under

precisely controlled conditions, and our greenhouse facility, consisting of 25,928 square feet of high quality greenhouse space, both at our headquarters in Davis, California. The controlled growth operations group uses these facilities to manage plant experiments and grow-outs under rigorously controlled conditions. They also carry out the initial seed increases and first stages of plant breeding for some projects. For certain projects, such as those relating to oil quality and resistant starch wheat, this group also manages crop breeding programs to develop plant varieties for the production of commercial products.

Field Trials and Commercial Production. Our trait evaluation and development group has extensive field and specialized statistical analytical capabilities, and is based in our Davis, California facility and has remote field operations in American Falls, Idaho and Brawley, California. The group also conducts field trials throughout the United States with specialized contractors, and elsewhere globally with our collaborators. This group also works actively with our commercial and joint venture partners to support their field trial execution and data analysis.

Our agricultural operations group manages late-stage and regulatory field trials and, in the case of GLA safflower, commercial crop production. Late-stage field trials are intended to develop extensive data on a limited number of potential commercial plant varieties. These trials may be used to test new varieties developed by our collaborators containing our traits, and to test our own commercial varieties for oil quality and grain quality programs. Similarly, regulatory trials develop data for use in submissions for regulatory review and may involve plant varieties developed by our collaborators or our own oil quality and grain quality programs.

Regulatory Data Generation. Our Analytical Services and Regulatory Science, or ASRS, group, located at our Davis, California facility, develops data for use in product selection and validation, certification of Sonova product specifications, and regulatory submissions. These data are generated from specialized analyses performed internally and externally under contract. The resulting data support regulatory submissions and provide core trait data to our collaborators for use in their crop-specific regulatory applications. The instrument-intensive work of the ASRS group provides automated DNA preparations, genomic blot analyses, lipid profiling, metabolomics, and protein purification services for us and our collaborators.

Biological Materials Inventory and Tracking. Our proprietary Pedigree and Inventory Management System, or PIMS, tracks the genetic, phenotypic, and location information for all of our plant materials. PIMS encompasses genetic elements such as genes and promoters, GM seeds, and plant material received by us, as well as seeds and plants developed by us and used in trait development. The performance of our plant materials is recorded through a variety of laboratory and field observations, and the data are stored within PIMS. The location of all plant materials is tracked throughout the plant life cycle. This includes specific seeds planted within a specific plot of a specific field trial, harvest, seed storage location, and use by, or distribution of plant material to, our collaborators or elsewhere. PIMS interfaces with our Biotechnology Quality Management System, or BQMS, to manage all movement and release of regulated GM plant materials. This ensures that all of our plant materials are accounted for, tracked, and inventoried, which enables us to maintain control over and documentation of all plant materials.

Regulatory Matters

Our regulatory management group provides regulatory services for all of our product development programs, as well as for joint ventures and selected collaborations. These services include establishing protocols, completing regulatory permits as necessary, and monitoring regulatory and stewardship compliance for all products at all stages.

Our regulatory group includes key employees who are directly responsible for leading all regulatory agency interactions and providing tactical and strategic regulatory direction. Our group collectively has more than 70 years of regulatory experience, with nearly 60 years of direct involvement in the development and approvals of GM crops. Members of our regulatory group were responsible for completing the first FDA and USDA deregulation of a GM whole food. The interactions and processes associated with these first USDA and FDA processes established benchmarks for the regulation of GM products that remain applicable today.

In addition to our core regulatory management group, we employ a group of scientists, our ASRS group, dedicated to data generation in support of regulatory filings. Our regulatory management and compliance activities encompass three broad categories: stewardship, authorization, and deregulation. In the United States, these activities are regulated by various government agencies, including the USDA, the FDA, and the U.S. Environmental Protection Agency, or EPA.

Stewardship

Stewardship, or the careful and responsible management of assets, forms the foundation of our regulatory compliance programs associated with GM plants. Our stewardship framework for GM plants is defined by government regulations and related internal policies. The USDA requirements and internal procedures for regulatory stewardship are embodied in our Biotechnology Quality Management System, or BQMS, which was developed by us and approved by the USDA Animal and Plant Health Inspection Service, Biotechnology Regulatory Service.

Our BQMS program was developed to address all conditions required under USDA authority to ensure containment of regulated plant material. The BQMS includes standard operating procedures, or SOPs, recording and reporting forms, instructions for managing all compliance related activities, and training requirements for all individuals handling GM plant materials. SOPs are highly detailed and consider all elements of each relevant activity or process. Each field trial site is accompanied by a field compliance guide and record containing multiple SOPs and associated forms for each activity. For example, a GM wheat trial requires 19 SOPs and associated verification forms.

Our BQMS is audited annually both internally and independently by an auditor trained and supervised by the USDA. Since our BQMS program was first recognized by the USDA in 2011, each annual independent audit has confirmed that our program is functioning as intended. Our BQMS manager has attended BQMS training programs at the request of the USDA to assist in training personnel at other companies, to share our experience and the SOPs that form the basis of our program.

Compliance with the specific parameters of regulatory requirements is only one element of stewardship. Additional activities within each functional group throughout the company are integral to the overall stewardship program. Each of our employees is trained on, and must comply with, relevant stewardship guidelines as defined and described in our BQMS.

Authorization

The USDA Biotechnology Regulatory Service, or BRS, has legal and regulatory authority over the movement and release of GM plants and seeds. "Movement" includes movement of regulated GM plant material between states and the importation of regulated GM plant material from outside the United States. "Release" includes field trials of any size and any other use of regulated GM plant material outside of contained greenhouses.

We have obtained over 180 authorizations from the BRS for the movement, importation or release of GM plants under development. General and specific conditions to maintain containment during all

activities associated with the movement or release are a requirement of each authorization. These conditions are defined and applied in the context of the BQMS.

Deregulation

Our business is subject to regulations related to agriculture, food and the environment. Plant products produced using GM technology are subject to laws and regulations in countries where the plants are grown and in countries where the GM plant-derived food and feed are consumed by humans or animals. Commodity products utilizing our GM traits may require approvals in multiple countries prior to commercialization, whereas our identity-preserved GM products (for example, GLA safflower and resulting Sonova products) may require approvals only in the limited geographies where the products are marketed and sold. Such products must be appropriately channeled in the food and feed markets to ensure that the products are not exported to geographies where necessary approvals have not been obtained.

U.S. Regulatory Agencies

U.S. Department of Agriculture. We must obtain USDA authorizations and permits in order to conduct the field releases of regulated materials that are necessary to advance the development of GM crops. Obtaining such authorizations and permits is generally routine and delays impacting the planned movement or release of GM material are uncommon. The USDA provides detailed regulations and guidance for obtaining a so-called *"Determination of Deregulated Status,"* which authorizes the commercial and uncontained growing of GM plants. For regulated GM plants, the USDA requires that a company petition the agency to demonstrate that the product is unlikely to pose a risk. Based on the information provided, the USDA prepares an Environmental Assessment, or EA, and/or an Environmental Impact Statement, or EIS, in order to make its determination. These procedures afford the public an opportunity to submit written comments on the draft EA or EIS for consideration by the USDA before the final version of the EA or EIS is published. For any GM plant product, there may be delays or requests for additional information based on the USDA's review or the public comments. Submissions received by the USDA from all applicants in August 2011 and thereafter averaged 27 months to completion; however, the USDA has announced proposed rules intended to significantly shorten this time period.

U.S. Food and Drug Administration. The FDA is responsible for food safety under the Federal Food, Drug and Cosmetic Act. The FDA recommended in its 1992 *Statement of Policy: Foods Derived from New Plant Varieties* that developers of GM plant products consult with the agency about the safety of GM products under development. In 1996, the FDA provided additional guidance to the industry on procedures for these consultations. These procedures require a developer intending to commercialize a food or feed product derived from a GM plant to first meet with the agency to identify and discuss relevant safety, nutritional, and other regulatory issues regarding the product. Subsequently, the developer must submit to the FDA a scientific and regulatory assessment supporting proposed product safety. The FDA evaluates the submission and engages with the developer to resolve any questions, requests for additional data, or other informational requirements. Once the FDA has determined that all requirements have been satisfied, the FDA concludes the consultation process by issuing a letter to the developer acknowledging completion of the consultation process with the addition of the product to the list of completed consultations on the FDA website. The completed consultation acknowledges product safety for use as food and feed. To date, over 150 GM products have completed this process. This process may have delays if the FDA requires additional data and information for its consultation and to resolve any questions the Agency may have. The FDA completed nine consultations in 2013 and 2014, with consultation time periods ranging from 13 to 40 months and averaging 21 months from first submission to conclusion.

Environmental Protection Agency. Certain products may also be regulated by the EPA, including plants that contain a plant-incorporated protectant, such as a pesticides or herbicide, or plants engineered to be treated with industrial chemicals.

International Regulation

Commercialization of GM crops in the United States requires approvals in those jurisdictions into which resulting products will be imported. The laws and regulations for GM plant products are well defined in many commercially significant jurisdictions, including Australia, South America, India and the European Union, and are evolving in others, such as Africa and China. Typically, our collaborators are responsible for obtaining all regulatory permits and approvals relevant to product development and commercialization in their licensed countries and for generating crop and transformation event-specific data required by jurisdictions of interest. We provide basic safety data on trait expression products in accordance with generally accepted standards and may serve as a regulatory consultant and participate in the design regulatory data generation protocols and development of regulatory submissions beyond the basic safety data package. In certain countries, we may develop strategic business relationships or employ independent consultants with geography-specific knowledge and expertise to support and obtain required approvals.

Intellectual Property

We rely on patents and other proprietary right protections, including trade secrets and contractual protection of our proprietary know-how and confidential information, to preserve our competitive position.

As of December 31, 2014, we owned or exclusively controlled 115 issued patents and 44 pending patent applications worldwide. As of this date, we owned 6 and exclusively in-licensed 19 U.S. patents and we owned seven and exclusively in-licensed one pending non-provisional U.S. patent applications relating to our trait technologies and business methods. Also, as of this date, we owned 11 and exclusively in-licensed 79 foreign patents and owned 16 and exclusively in-licensed 20 pending foreign patent applications. With respect to all of the foregoing patent assets, our exclusive licenses afford us control over the prosecution and maintenance of the licensed patents and patent applications. These numbers do not include in-licensed patents for which we either do not have exclusive rights (such as certain enabling technology licenses), or for which we have exclusive rights only in a limited field of use and do not control prosecution and maintenance of the licensed patents.

As of December 31, 2014, we had nine registered trademarks in the United States. As of this date, we also had eight registered trademarks and had one trademark application pending in various other countries.

We also have entered into in-license agreements enabling the use and commercialization of our traits, including NUE, WUE, and Salinity Tolerance, and certain products that we have commercialized or are under development, including GLA safflower oil and ARA safflower oil. Under these licensing arrangements, we are obligated to pay royalty fees on sublicense revenue and net product sales ranging between low single digit percentages and percentages in the mid-teens, subject in certain cases to aggregate dollar caps. The exclusivity and royalty provisions of these agreements are generally tied to the expiration of underlying patents. After the termination of these provisions, we and our collaborators may continue to produce and sell products utilizing the technology under the expired patents. While third parties thereafter may develop products using the technology under the expired patents, in many cases, we have incremental patent rights covering our most important technologies, which we believe mitigate the impact of the expiration of these patents, or the related exclusivity provisions, on our business.

We also have numerous in-licenses relating to enabling technologies utilized in our development programs, such as transformation methods (e.g., Japan Tobacco, DuPont Pioneer), promoters (e.g., Dow, Louisiana State University) and selectable marker technologies (e.g., Bayer). These in-licenses are non-exclusive and include some combination of upfront and annual license fees, milestone fees, and commercial royalty obligations consisting of low single-digit percentages, or in one instance, a low single-digit dollars per acre fee.

Below is a summary of those in-license agreements that we believe are most significant for our product development programs.

University of Alberta. We hold an exclusive license from University of Alberta to the patent portfolio that formed the basis of our NUE program, which began in 2002. In exchange for an upfront license fee, royalties on sublicense revenues and net product sales (which are capped at an aggregate amount in the mid-seven figures), and subject to the University's right to perform academic research using the technology, we exclusively control all research, development, commercialization and sublicensing of the patented technology globally for all crops.

Blue Horse Labs. In conjunction with a sponsored research and development agreement entered into in 2003, we obtained an exclusive license from Blue Horse Labs, an affiliate entity of our majority stockholder, Moral Compass Corporation, for technology related to several of our development programs. Under the sponsored research and development agreement, Blue Horse Labs has an ownership right in patents covering technology that was developed using Blue Horse Labs funds, including certain NUE and GLA safflower patents. In the corresponding license agreement, in exchange for a single-digit royalty on net revenues and management of all aspects of the patent portfolio, we exclusively control all research, development, commercialization and sublicensing of the patented technology globally for all crops.

University of California. Our WUE technology was developed under an exclusive option agreement with the University of California, pursuant to which we exercised our right to secure an exclusive license in 2010. In exchange for an upfront license fee, license maintenance fees, and royalties on sublicense revenues and net product sales, we exclusively control all for-profit research, development, commercialization and sublicensing of the patented technology globally for all crops.

University of Toronto. We hold an exclusive license from University of Toronto to the patent portfolio that forms the basis of our salinity tolerance program. In exchange for an upfront license fee, a low single-digit royalty on revenues, and payment of all costs associated with the patent portfolio, and subject to the University's right to use the technology for research and teaching purposes, we exclusively control all for-profit research, development, commercialization and sublicensing of the patented technology globally for all crops.

Abbott. We entered into a license and development agreement with Abbott in 2003 under which we have been granted limited exclusive rights to Abbott's portfolio of U.S. and foreign patents relating to the development of plant-based sources of GLA, ARA, and essential fatty acids. Under this agreement, we provide Abbott with preferential access to commercial products from our GLA and ARA safflower programs, as well as the right to receive low single-digit royalty payments on product sales to third parties, in exchange for the licenses to Abbott's intellectual property rights.

Key Collaborations

Since our founding in 2002, we have established numerous trait collaborations and have developed deep relationships with industry-leading seed and consumer product companies. Our partnerships with global strategic seed and consumer product players enable us to further participate in the development and commercialization of innovative products that promise to play significant roles in improving global crop efficiency and enhancing human health. The results of these collaborations directly feed

innovation and drive the progress of our ongoing programs. Moreover, the expertise and opportunities created by the collaborations represent important assets to our business. While our collaboration-focused business model has resulted in numerous strategically significant relationships, below is a summary of selected collaborative partnerships that we view as key to the achievement of our near-term and mid-term business objectives.

Mahyco

We have multiple collaborative agreements with Mahyco covering more than 15 programs, using our most advanced traits in multiple major crops crops and have been working with Mahyco as a key partner since 2008. Our collaborations in NUE rice and salt tolerant rice are in advanced stages of development.

Under our various agreements relating to our NUE, WUE, and Salinity Tolerance traits, Mahyco has exclusive research and commercial rights in all licensed geographies and must timely meet certain diligence milestones in order to maintain their exclusivity. Each of our collaboration agreements with Mahyco includes an upfront technology access fee, technical and regulatory milestone fees, and once products utilizing our traits are commercialized, we are entitled to receive a portion of the commercial value of seeds sold by Mahyco incorporating our traits. Mahyco is entitled to offset some of these fees against outstanding convertible promissory notes issued by us. Rights to new intellectual property developed under a collaboration agreement are owned by the inventing party or parties.

Vilmorin & Cie (Limagrain)

We selected Limagrain as our strategic partner and collaborator in wheat—the world's largest crop by area grown and the third most valuable at $186.4 billion annual value—due to their position as the leading global breeder and marketer of wheat seeds. In 2009, we executed an agreement with Limagrain under which we partnered to develop and commercialize NUE wheat in all countries of the world except Australia, India, Pakistan, Bangladesh and Sri Lanka. Under our agreement, Limagrain has exclusive research and commercial rights in all licensed geographies except North America and South America, in which we retained co-exclusive rights, and Limagrain must timely meet diligence milestones to maintain exclusivity. Our agreement with Limagrain includes an upfront technology access fee, annual maintenance fees, and technical and regulatory milestone fees, and once an NUE wheat product is commercialized, we are entitled to receive a portion of the commercial value of the trait in the marketplace. Limagrain owns rights to new intellectual property it develops that is based on our NUE technology, but Limagrain has agreed not to assert its rights in any way that limits our ability or our other collaborators' ability to use our NUE technology in crops other than wheat. We and Limagrain have since coordinated with collaborators in Australia to align development efforts in NUE wheat on a global basis.

In 2010, we further expanded our relationship with Limagrain from collaborator to stockholder and joint venture partner. Contemporaneously with Limagrain's $25 million equity investment in our company, we formed Limagrain Cereal Seeds LLC, a joint venture company focused on the development and commercialization of improved wheat seed in North America, of which a U.S. wholly-owned subsidiary of Limagrain owns 65% and we own 35%. This joint venture strengthens a close strategic relationship between us and Limagrain, and increases the share of net trait value that we will recognize on traits commercialized in wheat.

As a key strategic partner, Limagrain has a right of first offer to license—on an arm's-length basis—new technologies that we develop or acquire that are applicable to wheat or barley. This right of first offer extends to Limagrain Cereal Seeds for the United States and Canada. Pursuant to the right of first offer, we formed a global collaboration with Limagrain and Limagrain Cereal Seeds in 2011 to develop and commercialize WUE wheat. Our agreement with Limagrain and Limagrain Cereal Seeds

includes an upfront technology access fee and technical and regulatory milestone fees, and once a product is commercialized, we are entitled to receive a portion of the commercial value of the WUE trait in the marketplace.

Bioceres

In 2012, we partnered with Bioceres, an Argentina-based technology company, to form Verdeca LLC, a U.S.-based joint venture company engaged in the development and deregulation of soybean traits, of which we own 50%. We selected Bioceres as our partner in soybeans—the world's fourth largest crop by area grown and the fourth most valuable at $119 billion annual value—due to their desirable trait portfolio, their presence in key South American markets and the significant presence of large soybean growers in their ownership structure.

Our joint venture agreement provides for each of the joint venture partners to license its trait technologies to Verdeca for use in soybeans, with product development and regulatory efforts equitably divided and managed by us and Bioceres under standalone service agreements that are executed annually. The first product in the Verdeca pipeline is a drought and abiotic stress tolerance trait that has already completed extensive validation trials and is now in the regulatory phase of development. This trait has been demonstrated to confer a seven to 16% yield advantage over conventional soybeans grown under the same suboptimal conditions. Verdeca's pipeline also includes our NUE and WUE technologies, which are combined in a two-trait stack that will be further stacked with the initial drought and abiotic stress tolerance trait discussed above. Verdeca has successfully negotiated favorable market access in South America through established players and is working on adding market channel partners in the United States, India and China.

In addition to those agreements with Bioceres directly associated with Verdeca, we also have negotiated exclusive access to Bioceres' drought and abiotic stress tolerance trait for use globally, outside of South America, in wheat. Our agreement with Bioceres provides for sharing of trait value once a product is commercialized.

Scientific Advisory Board

We maintain a scientific advisory board consisting of the members identified below. Our scientific advisory board meets on a quarterly basis and is comprised of industry and academic experts that have extensive experience in the analysis, research and development, and commercialization of biotech plants, including experience relating to discovery, transformation, and field trials. We consult with our scientific advisory board on a variety of matters pertaining to our current and future pipeline of products in development, including, for example, trait selection and development, transformation and TILLING methodologies, field trials, regulatory matters and intellectual property evaluation.

We currently have scientific advisory board that consists of six members as follows:

Eduardo Blumwald, Ph.D. is a professor at the University of California, Davis. Dr. Blumwald's research program is multidisciplinary in nature, combining physiology, biochemistry, molecular biology, genomics, and proteomics. The general objectives of his work are: (i) the cellular and molecular mechanisms that regulate ion homeostasis in plants; (ii) the cellular and molecular mechanisms mediating the responses of plants to abiotic stress (e.g., salt, drought, and heat); (iii) the biochemical and molecular basis of sugar and acid accumulation in fruits; and (iv) the development of genomic and proteomic resources for the improvement of fruit quality. Dr. Blumwald has worked closely with our scientists from the time of his former position with the University of Toronto.

Vicki Chandler, Ph.D. is Chief Program Officer, Science, at the Gordon and Betty Moore Foundation. She studied biochemistry for her undergraduate and doctoral degrees at the University of California, Berkeley, and the University of California, San Francisco, respectively. She then pursued

postdoctoral research at Stanford University and was on the faculty at the University of Oregon and the University of Arizona. Dr. Chandler's research on paramutation, an epigenetic process, has implications not only for corn, which she used for the majority of her research, but also for animal and human genetics and genetic diseases. Dr. Chandler is president of the Genetics Society of America, a member of the National Academy of Sciences, and a member of the National Science Board. Her many honors include the Presidential Young Investigator Award, Searle Scholar Award, and American Association for the Advancement of Science Fellow. She has served on advisory boards and panels for the National Research Council, National Science Foundation, Department of Energy, and National Institutes of Health. Dr. Chandler has chaired numerous conferences and served on the editorial boards of several journals, including Genetics, Plant Physiology, PNAS, and Science.

Luca Comai, Ph.D. is a professor at the Genome Center in University of California, Davis. Dr. Comai's lab is involved in two areas pertinent to breeding. In the first, they study genome regulation, hybridization, and heterosis responses in chromosome copy number variants and interspecific hybridization. In the second, they develop and make available to the plant community a functional genomic discovery tool called TILLING that allows targeted inactivation of genes in crop plants. The research combines plant genetics and genomics with the use of next-generation sequencing and bioinformatics to identify genes responsible for traits of interest as well as to discover and use natural and induced variation. Dr. Comai is known for his pioneering work creating glyphosate tolerant crops, and as a founding scientist in Calgene Pacific, Targeted Growth, Inc., and Tilligen.

Georges Freyssinet, Ph.D. is recently retired after many years in the plant biotechnology industry in France. He is the former CEO of RhoBio, a joint venture between Rhône-Poulenc Agro and Biogemma, and served as the Scientific Advisor for Life Sciences for the RP Group. Dr. Freyssinet is the former director of plant genomics for Aventis, which was later acquired by BayerCropScience. He joined Biogemma in 2003 to lead their genomic and bioinformatics platform, and in 2006 he joined the Scientific Direction of Group Limagrain, serving as Scientific Director from 2008-2011. Dr. Freyssinet is the founder and former CEO of LemnaGene, a biomanufacturing company, and the former CEO of Genective, a joint venture between Groups Limagrain and KWS. Retired since 2014, he continues his independent consulting activities in plant biotechnology.

Jim Petersen, Ph.D. is Vice President for Research at Limagrain Cereal Seeds, a U.S. joint venture between Groupe Limagrain and Arcadia Biosciences, where he currently oversees all U.S. breeding operations. Prior to joining Limagrain, Dr. Peterson spent 27 years in public sector wheat research, including 12 years as the Krondstadt Professor of Wheat Breeding and Genetics at Oregon State University. Dr. Peterson served as Chair of the National Wheat Improvement Committee and is a recipient of the Weatherford Award for Entrepreneurship and Innovation from the College of Business at Oregon State University. He is noted for his fundamental research on wheat end-use quality and GxE interactions impacting quality. Dr. Peterson received his B.S. in agronomy from Washington State University and his M.S. and Ph.D. in agronomy and plant breeding from the University of Nebraska.

Peter Quail, Ph.D is a professor of Plant and Microbial Biology at the University of California, Berkeley where he also serves as Research Director of the Plant Gene Expression Center (U.S. Department of Agriculture/Albany, California). Dr. Quail has been a pioneer in the study of phytochromes, photoreceptor proteins that play a major regulatory role in plant growth and development. Dr. Quail was elected to the National Academy of Sciences in 2004, as a Fellow of the American Association of Science in 2004, and was the recipient of the Stephen Hales Prize, American Society of Plant Biologists, 2008. He received a B.S. and Ph.D. from the University of Sydney, Australia.

Competition

The markets for seed traits and agricultural biotechnology products are highly competitive, and we face significant direct and indirect competition in several aspects of our business. Competition for improving plant genetics comes from conventional and advanced plant breeding techniques, as well as from the development of advanced biotechnology traits. Other potentially competitive sources of improvement in crop yields include improvements in crop protection chemicals, fertilizer formulations, farm mechanization, other biotechnology, and information management. Programs to improve genetics and chemistry are generally concentrated within a relatively small number of large companies, while non-genetic approaches are underway with broader set of companies.

In general, we believe that our competitors generally fall into the following categories:

- *Large Agricultural Biotechnology, Seed, and Chemical Companies:* According to Phillips McDougall, the leading 11 seed and trait companies as a group invested $4.1 billion in seed and trait research and development in 2013. This includes conventional and advanced plant breeding, as well as biotechnology trait development. According to Phillips McDougall, only a limited number of companies have been actively involved in new trait discovery, development, and commercialization: Monsanto, DuPont Pioneer, Syngenta, BASF, Bayer, Dow, KWS, and Genective (a joint venture between KWS and Limagrain). Many of these companies have substantially larger budgets for gene discovery, research, development, and product commercialization than we do. Some of these companies also have substantial resources and experience managing the regulatory process for new GM seed traits. Each of Monsanto, DuPont Pioneer, Syngenta, Dow, and Bayer, which accounted for 85% of the 2013 seed trait research and development spend noted above, also have significant chemical crop protection background and businesses. The trait pipelines of these companies are heavily weighted toward biotic stress traits, although they also have significant programs aimed at development of abiotic stress traits. While these companies have internal programs that may compete with our own, they also seek new traits externally and, as such, some of them either currently are, or may in the future be, our collaborators. In addition, some of these companies are currently among our sources for new trait technologies.

- *Trait Research and Development Companies:* There are a number of companies that specialize in research and development of agricultural productivity and product quality traits, and we believe that a dozen or more companies, including Evogene, Ceres, and Keygene, among others, are competitors in our field. We believe that these companies typically focus on a limited number of traits, and do not generally have the product development and regulatory infrastructure necessary to bring traits to market. Therefore, they typically license trait technologies to large industry players with in-house development and regulatory capabilities at a relatively early stage of development.

- *Companies Focused on the Development and Commercialization of Microbial Crop Enhancements:* The use of microbial products to enhance crop performance via application to soil, seed, or to crops directly is an area where increased research and development activity has been underway for the past decade or more. We believe that there are more than 20 companies of varying size working in this space. There have been a number of acquisitions, including Becker Underwood by BASF, and joint collaborations in this space, but multiple independent companies remain, including Verdesian, Rizobacter, Biagro, and Bioconsortia. While these companies could be considered to compete with us as their products seek to improve crop yields, we believe that such products and our traits may be additive, or synergistic, to our future products in terms of increasing crop yields.

- *Companies Focused on Farming Data Management, or Precision Agriculture:* Within the past several years there has been a rapid increase in technologies and companies focused on

acquiring, analyzing, and acting upon data in ways that may improve farm economics via increased crop yield and more efficient management of crop production inputs. Technical approaches include weather prediction and monitoring, high-density field and crop imaging systems, precision field soil and yield mapping, and others. Companies focusing on this space include Trimble, Planet Labs, Ceres Imaging, Blue River, and others. While these products are potentially competitive with us for increasing crop yields, we believe that certain of these products could also be additive or synergistic with our traits.

- *Agricultural Research Universities and Institutions:* Given the global importance of agriculture, numerous agricultural research universities and institutions around the world focus on basic and applied research aimed at increasing crop productivity. According to the Agricultural Science and Technology Indicators, global public spending on agricultural research and development in 2008 totaled $31.7 billion, having increased by 22% during the years from 2000 to 2008. Spending in 2008 in high income countries accounted for approximately 51% of the total, while spending in low and middle income countries accounted for 49% of the total. The United States was the largest contributor of public agriculture funding in 2008 with a total investment of $4.8 billion. Most of this publicly funded research is focused on basic research. Many public research programs aim to understand basic biological processes and do not necessarily engage in further development and commercialization of discovered traits. While these programs are potentially competitive with us, we view them primarily as sources of innovation that fit with our business model. We have an established track record of working closely and effectively with public research programs, including a number from the U.S., Canada, Japan, Australia, Spain, Ireland, and elsewhere.

We believe that we are uniquely positioned at the nexus of basic research and commercial product development. Unlike many companies in our space, we generally do not compete in the area of basic research. Our focus is on development and validation and, therefore, we provide a value-added link by which basic research can be brought to market. Public research institutions provide us with a source of innovative new technologies and traits and, while such basic research programs are competitive with in-house programs at the largest seed and technology companies, global public investment in basic research in 2008 at more than $31 billion was more than seven times greater than industry spending in 2013. We believe that these public programs are valuable and sustainable sources of new technologies for us and we have earned a reputation in our industry as a trustworthy and effective partner based on our demonstrated ability to manage the development and regulatory processes for GM seeds and capture additional value for ourselves and our basic research collaborators. While internal programs at the largest seed and technology companies are competitive with ours in some cases, we are technology providers to some of these companies, and we have numerous collaborations with many of them. To remain competitive, we plan to pursue multiple strategies, including further building our pipeline of new technologies from basic research programs, increasing the scope and range of our field testing activities, and continuing to protect our intellectual property rights in key jurisdictions globally.

Research and Development

As of December 31, 2014, we had 46 full-time employees dedicated to research and development, nine of whom are development and field personnel focused on demonstration and research field trials. Our research and development team has technical expertise in molecular biology, biochemistry, genetics and genetic engineering, analytical chemistry, plant physiology, plant virology, molecular pathogenesis and soil and water science. Our research and development activities are conducted principally at our Davis, California and Seattle, Washington facilities, with ongoing field trials conducted in American Falls, Idaho; Brawley, California; and numerous other locations throughout the United States and at locations managed by our collaborators worldwide. We have made, and will continue to make, substantial investments in research and development. Our research and development expenses were

$7.9 million, $8.4 million, $6.2 million, and $7.9 million in the years ended December 31, 2012 and 2013 and the nine months ended September 30, 2013 and 2014, respectively.

Employees

As of December 31, 2014, we had 77 full-time employees, of whom 13 hold Ph.D. degrees. Approximately 50 employees are engaged in research and development activities, four in business development, three in regulatory management and 20 in management, operations, accounting/finance, legal, and administration. We consider our employee relations to be good. None of our employees are represented by a labor union or collective bargaining agreement.

Facilities

Our corporate headquarters are located in Davis, California, in a facility consisting of approximately 20,775 square feet of office, laboratory, and growth chamber space under a lease that expires on June 30, 2015, pursuant to which we have an option to renew the lease for an additional three-year term. This facility accommodates research and development, operations, analytical services, regulatory, and administrative activities. We also lease approximately 4,381 square feet of office and laboratory space in Seattle, Washington, where our team of scientists executes our TILLING technology platform, under a lease that expires on December 31, 2015, with an option to renew for an additional one-year term. Our administrative offices in Phoenix, Arizona consist of 1,913 square feet under a lease that expires on December 31, 2016 and accommodate finance, legal, and other administrative activities, as well as sales and marketing activities for our Sonova products. We also lease greenhouse space and farm land for agricultural use in Northern California as well as farmland in Idaho. We also lease grain bin and office space in Idaho under a lease that expires on March 3, 2019.

We believe that our leased facilities are adequate to meet our current needs and that, if needed, suitable additional or alternative space will be available to accommodate our operations.

Legal Proceedings

We currently are not a party to any material litigation or other material legal proceedings. From time to time, we may be subject to legal proceedings and claims in the ordinary course of business.

MANAGEMENT

The following table provides information regarding our executive officers and directors as of December 31, 2014:

Name	Age	Position
Eric J. Rey	58	President, Chief Executive Officer, and Director
Vic C. Knauf, Ph.D.	63	Chief Scientific Officer
Steven F. Brandwein	59	Vice President of Finance and Administration
Wendy S. Neal	41	Vice President and Chief Legal Officer
Don Emlay	72	Vice President of Regulatory Affairs and Compliance
Roger Salameh	51	Vice President of Business Development
Zhongjin Lu, Ph.D.	49	Vice President of Product Development
Darby E. Shupp(1)(3)	38	Chairman of the Board of Directors
Peter Gajdos(2)(3)	32	Director
Uday Garg(1)(2)(3)	35	Director
James R. Reis(1)	57	Director
Mark W. Wong(2)(3)	65	Director

(1) Member of Audit Committee

(2) Member of Compensation Committee

(3) Member of Nominating and Governance Committee

Executive Officers

Eric J. Rey is one of our founders and has served as our President and Chief Executive Officer and a director of our company since August 2003. Mr. Rey has managed agricultural research, product development, and commercialization programs for more than 30 years, most of which have focused specifically on food, feed, and industrial products from agricultural biotechnology. Prior to founding our company, Mr. Rey worked as a partner with the Rockridge Group, a management consulting firm focused on the agricultural biotechnology industry. While at Rockridge, Mr. Rey managed the development of strategic partnerships for early-stage companies developing genomic, biopharmaceutical, nutraceutical, crop protection, animal nutrition and health, alternative crop, and industrial products. Prior to his work with Rockridge, Mr. Rey served as Vice President of Operations for the Calgene Oils Division of the Monsanto Company. During his 17 years at Calgene, he was responsible for the establishment and management of the company's operational, product development, and agricultural infrastructure. Mr. Rey holds a B.S. in Plant Science from the University of California, Davis. We believe that Mr. Rey is qualified to serve as a member of our board of directors because of his operational and historical expertise gained from serving as our President and Chief Executive Officer. As one of our founders and the longest serving member of our board of directors, we also value his deep understanding of our business as it has evolved over time.

Vic C. Knauf, Ph.D. has served as our Chief Scientific Officer since June 2005. Dr. Knauf has 30 years of experience in agricultural product and technology development. Prior to joining our company, Dr. Knauf founded Anawah, Inc., a food and agricultural research company focused on the development of value-added whole foods, which we acquired in 2005. Before Anawah, Dr. Knauf served as a Director of Monsanto Food and Nutrition Research and Vice President of Research at Calgene, Inc. Dr. Knauf holds a B.S. in Biology from the New Mexico Institute of Mining and Technology and a M.S. and Ph.D. in Microbiology and Immunology from the University of Washington.

Steven F. Brandwein has served as our Vice President of Finance and Administration since September 2002 and as our Treasurer since June 2014. He previously served as our Secretary from September 2002

until June 2014. Mr. Brandwein has more than 30 years of business, operations and international finance experience in agricultural biotechnology and a range of other industries. Prior to joining us, Mr. Brandwein served as CFO for Rulebase, Inc., an early-stage software company, where he led the finance, accounting, and human resources functions. Before joining Rulebase, Mr. Brandwein spent more than 10 years as an executive with Dial Corporation, including seven years based in London as the Controller for the company's European finance subsidiaries. Mr. Brandwein holds a B.A. in International Relations from the University of Minnesota and a Masters in International Management from Thunderbird School of Global Management.

Wendy S. Neal has served as our Vice President and Chief Legal Officer since October 2008, and has served as our Secretary since June 2014. Ms. Neal has more than 15 years of experience in intellectual property and business law. Prior to joining our company, Ms. Neal was a partner in the Intellectual Property & Technology group at the law firm of Snell & Wilmer L.L.P. and served as our outside counsel. Prior to joining Snell & Wilmer, Ms. Neal worked with the patent team at GE Aircraft Engines and has served in technical roles at companies such as BP Oil, BP Chemicals, and Henkel Corporation. Ms. Neal has also served as Risk Policy Consultant to the American Institute of Chemical Engineers government relations team. Ms. Neal holds a B.S. in Chemical Engineering and a J.D. from the University of Cincinnati.

Don Emlay has served as our Vice President of Regulatory Affairs and Compliance since June 2004. Mr. Emlay has nearly 40 years of regulatory experience with consumer, industrial, and transgenic plant products. Prior to joining our company, Mr. Emlay was an independent consultant and provided counsel in the areas of research, product development, production, and regulatory procedures. Before his work as a consultant, Mr. Emlay served as Vice President of Regulatory Affairs with Calgene Inc. for 13 years. Prior to Calgene, Mr. Emlay worked with Zoecon where he worked exclusively with the EPA in obtaining approvals for the first insect growth regulators to be registered for homeowner and pest control applications. Mr. Emlay holds a B.S. in Entomology from San Jose State University.

Roger Salameh has served as our Vice President of Business Development since November 2003. Mr. Salameh has more than 22 years of executive, managerial, and operations experience in agricultural, biotechnology, and food ingredients businesses. Prior to joining our company, Mr. Salameh was a consultant with Rockridge. Before joining Rockridge, Mr. Salameh served as director of business development at Monsanto. Prior to Monsanto, Mr. Salameh served as product manager for Calgene, Inc.'s genetically modified oils business. Mr. Salameh attended New York University where he studied Economics and Political Science.

Zhongjin Lu, Ph.D. has served as our Vice President of Product Development since May 2010. He previously served as our Director of Product Development and Plant Breeding since our inception. Dr. Lu has 30 years of experience in agronomy, crop genetics and breeding, plant physiology, and agricultural biotechnology. Prior to joining our company, Dr. Lu was the Director of Plant Breeding and Senior Scientist at Seaphire International, Inc., a seawater-based agricultural company in Arizona. Before his work with Seaphire, Dr. Lu worked for Monsanto Company where he was responsible for the project of salicornia genetic improvement for saline agriculture. Prior to Monsanto Company, Dr. Lu was associated with the Jiangsu Academy of Agricultural Sciences. Dr. Lu holds an M.S. in Plant Genetics and Breeding from Nanjing Agricultural University, China, and a Ph.D. in Plant Physiology from Technion—Israel Institute of Technology.

Each executive officer serves at the discretion of our board of directors and holds office until his or her successor is duly elected and qualified or until his or her earlier resignation or removal. There are no family relationships among any of our directors or executive officers.

Non-Employee Directors

Darby E. Shupp has served as chairman of our board of directors since June 2014 and as a director of our company since February 2010, and served as our treasurer from February 2010 until June 2014. Since January 2010, Ms. Shupp has served as Chief Financial Officer of Moral Compass Corporation, an investment company formed by Dr. John Sperling, the founder of Apollo Education Group, Inc. and one of our founders. Since February 2005, Ms. Shupp has been employed by various entities affiliated with Moral Compass Corporation. She previously worked for Deloitte LLP as an Audit Manager serving clients in the business services, manufacturing, and real estate industries. Ms. Shupp has served as a director of Apollo Education Group since March 2011. Ms. Shupp holds a B.S. in Accountancy from Arizona State University and is a Certified Public Accountant. We believe that Ms. Shupp is qualified to serve on our board of directors due to her management, accounting, and operational experience as an executive and director for public and private companies.

Peter Gajdos has served as a director of our company since May 2014. Since November 2014, Mr. Gajdos has served as a managing director and portfolio manager at Presidio Partners, a venture capital investment firm. From July 2013 to November 2014, Mr. Gajdos served as a managing director and portfolio manager at CMEA Capital, a venture capital investment firm. He co-founded AgoraSol LLC, a solar development company, in March 2013 and had an active role at the company from March 2013 until June 2013. From September 2012 to December 2012, Mr. Gajdos was a consultant at Silver Lake Kraftwerk, a technology investment firm. From June 2012 to August 2012, he was an intern at Warburg Pincus, a private equity investment firm. From April 2007 to July 2011, Mr. Gajdos worked as an associate at the Virgin Green Fund, a private equity investment firm. He has served as a director of CNano Technology Limited since August 2013. Mr. Gajdos served on the board of Reel Solar Inc. from September 2013 until its acquisition in April 2014. He holds a B.A. in International Business and Finance from the Kenan-Flagler Business School at the University of North Carolina-Chapel Hill and an M.B.A. from the Wharton School of Business at the University of Pennsylvania. We believe that Mr. Gajdos is qualified to serve as a member of our board of directors because of his extensive experience in the venture capital industry and his knowledge of technology companies. Pursuant to Presidio Partners policy, Mr. Gajdos has notified us that he plans to resign from our board of directors prior to the initial public offering.

Uday Garg has served as a director of our company since June 2014. Mr. Garg founded Mandala Capital, a private equity fund, in 2008 and has served as managing director and a director since its inception. As part of his duties at Mandala, Mr. Garg serves on the boards of various Mandala portfolio companies and affiliated investment vehicles. Previously, Mr. Garg was a portfolio manager at Duet Group, Altima Partners, and Amaranth Advisors. He began his career as an investment banker in the corporate finance and mergers and acquisitions department of Deutsche Bank. He holds a B.S. in Economics with a concentration in Finance from the Wharton School of Business at the University of Pennsylvania. Mr. Garg has considerable experience in the private equity industry and extensive knowledge of the seed business in India, which provides our board of directors a useful perspective on our business strategy in India.

James R. Reis has served as a director of our company since August 2005. He also served as a director of Apollo Group, Inc. from March 2007 to January 2010. Since 2006, Mr. Reis has been employed by and served as Vice Chairman of Gainsco, Inc., an insurance company. Mr. Reis holds a B.S. in Accounting from St. John Fisher College in Rochester, New York and is a Certified Public Accountant (inactive). We believe that Mr. Reis is qualified to serve as a member of our board of directors due to his financial, accounting, and operational expertise from prior experience as an executive and director for public and private technology companies.

Mark W. Wong has served as a director of our company since May 2006. Mr. Wong was the Chief Executive Officer of Renewable Agricultural Energy Corporation, a private ethanol production

company, from 2006 to 2007. From 1999 to 2005, Mr. Wong was the founder and Chief Executive Officer of Emergent Genetics, an international seed company sold to Monsanto Company in 2005. Prior to that time, Mr. Wong founded and managed a series of agricultural and biotechnology companies including Big Stone Partners, Agracetus Corporation, and Agrigenetics Corporation. Mr. Wong also worked as an engineer for FMC Corporation and Chemical Construction Corporation. Mr. Wong served as a director of BioFuel Energy Corp., a publicly traded ethanol company, from January 2008 until October 2014, and Chair from March 2010 to October 2014, when it was renamed Green Brick Partners following an acquisition and recapitalization transaction. Mr. Wong holds a B.S. in Chemical Engineering from Lehigh University and a M.B.A. from the Wharton School of Business at the University of Pennsylvania. Mr. Wong brings to our board of directors over 35 years' experience in the biotechnology and seed industries as a founder and manager. His service on a number of private and public company boards also provides an important perspective on corporate governance matters.

Code of Business Conduct and Ethics

Our board of directors has adopted a code of business conduct and ethics that applies to all of our employees, including our Chief Executive Officer, Chief Financial Officer, and other executive and senior financial officers. Our board of directors also has adopted a code of conduct and ethics that applies to all directors. The full text of our code of business conduct and ethics for employees and our code of conduct and ethics for directors will be posted on the investor relations page on our website. We intend to disclose any amendments to these documents, or waivers of their requirements, on our website or in filings under the Securities Exchange Act of 1934, or the Exchange Act, as required by the applicable rules and exchange requirements.

Board of Directors

Our business and affairs are managed under the direction of our board of directors. The number of directors will be fixed by our board of directors, subject to the terms of our amended and restated certificate of incorporation and amended and restated bylaws that will become effective upon the completion of this offering. Our board of directors will consist of directors, of whom will qualify as "independent" under the listing standards of The NASDAQ Stock Market.

In accordance with our amended and restated certificate of incorporation and our amended and restated bylaws, upon the completion of this offering our board of directors will be divided into three classes with staggered three-year terms. Only one class of directors will be elected at each annual meeting of our stockholders, with the other classes continuing for the remainder of their respective three-year terms. Our directors will be divided among the three classes as follows:

- the Class I directors will be and , and their terms will expire at the annual meeting of stockholders to be held in 2015;
- the Class II directors will be and , and their terms will expire at the annual meeting of stockholders to be held in 2016; and
- the Class III directors will be , , and , and their terms will expire at the annual meeting of stockholders to be held in 2017.

Any increase or decrease in the number of directors will be distributed among the three classes so that, as nearly as possible, each class will consist of one-third of the directors.

This classification of our board of directors may have the effect of delaying or preventing changes in control of our company.

Currently, Ms. Shupp serves on our board of directors as designee of entities affiliated with Moral Compass Corporation, Mr. Garg serves on our board of directors as designee of Mandala Capital, and

Mr. Gajdos serves on our board of directors as designee of certain of our preferred stockholders, in each case pursuant to the provisions of a voting agreement among us and certain of our stockholders. The voting agreement will terminate upon completion of this offering. For additional information, see "Certain Relationships and Related Party Transactions—Voting Agreement."

Director Independence

In connection with this offering, we intend to list our common stock on The NASDAQ Global Market. Under the rules of The NASDAQ Stock Market, independent directors must comprise a majority of a listed company's board of directors within a specified period of time after completion of such company's initial public offering. In addition, the rules of The NASDAQ Stock Market require that, subject to specified exceptions, each member of a listed company's audit, compensation, and nominating and governance committees be independent. Under the rules of The NASDAQ Stock Market, a director will only qualify as an "independent" director if, in the determination of that company's board of directors, that director does not have a relationship that would interfere with the exercise of independent judgment in carrying out the responsibilities of a director.

Audit committee members must also satisfy the independence criteria set forth in Rule 10A-3 under the Securities Exchange Act of 1934, as amended, or the Exchange Act. In order to be considered independent for purposes of Rule 10A-3, each member of the audit committee of a listed company may not, other than in his or her capacity as a member of such committee, the board of directors, or any other board committee: (i) accept, directly or indirectly, any consulting, advisory, or other compensatory fees from the listed company or any of its subsidiaries; or (ii) be an affiliated person of the listed company or any of its subsidiaries.

Our board of directors has undertaken a review of its composition, the composition of its committees, and the independence of each director and considered whether any director has a material relationship with us that could compromise his or her ability to exercise independent judgment in carrying out his or her responsibilities. Based on information provided by each director concerning his or her background, employment, and affiliations, including family relationships, our board of directors has determined that do not have a relationship that would interfere with the exercise of independent judgment in carrying out the responsibilities of a director and that each of these directors is "independent" as that term is defined under the applicable rules and regulations of the SEC, and the listing standards of the The NASDAQ Stock Market. In making these determinations, our board of directors considered the current and prior relationships that each non-employee director has with our company and all other facts and circumstances our board of directors deemed relevant in determining their independence, including the beneficial ownership of our capital stock by each non-employee director, and the transactions involving them described in the section titled "Certain Relationships and Related Party Transactions."

Committees of the Board of Directors

Our board of directors has established an audit committee, a compensation committee, and a nominating and governance committee. The composition and responsibilities of each of the committees of our board of directors is described below. Members will serve on these committees until their resignation or until as otherwise determined by our board of directors.

Audit Committee

Effective on the date of this offering, our audit committee will consist of , with serving as audit committee chair. Our board of directors has determined that each of the members of our audit committee satisfies the requirements for independence and financial literacy under the current listing standards of The NASDAQ Stock Market and SEC rules and regulations, including

Rule 10A-3. Our board of directors has also determined that and are each an audit committee financial expert within the meaning of Item 407(d) of Regulation S-K under the Securities Act of 1933, as amended, or the Securities Act. Our audit committee will be responsible for, among other things:

- selecting a qualified firm to serve as the independent registered public accounting firm to audit our financial statements;
- helping to ensure the independence and performance of the independent registered public accounting firm;
- discussing the scope and results of the audit with the independent registered public accounting firm, and reviewing, with management and the independent registered public accounting firm, our interim and year-end operating results;
- developing procedures for employees to submit concerns anonymously about questionable accounting or audit matters;
- reviewing our policies on risk assessment and risk management;
- reviewing related party transactions; and
- approving all audit and all permissible non-audit services, other than de minimis non-audit services, to be performed by the independent registered public accounting firm.

Our audit committee will operate under a written charter, to be effective on the date of this offering, that satisfies the applicable rules of the SEC and the listing standards of The NASDAQ Stock Market and that will be available on our website upon completion of this offering. In accordance with and pursuant to Section 10A(i)(3) of the Exchange Act, our board of directors has delegated to the authority to pre-approve any auditing and permissible non-auditing services to be performed by our registered independent public accounting firm, provided that all such decisions to pre-approve an activity are presented to the full audit committee at its first meeting following any such decision.

Compensation Committee

Effective on the date of this offering, our compensation committee will consist of , each of whom is a non-employee member of our board of directors, with serving as compensation committee chair. Our board of directors has determined that each member of the compensation committee meets the requirements for independence under the listing standards of The NASDAQ Stock Market and SEC rules and regulations, is a non-employee director, as defined pursuant to Rule 16b-3 promulgated under the Exchange Act, and is an outside director, as defined pursuant to Section 162(m) of the Internal Revenue Code of 1986, or the Code. The purpose of our compensation committee is to discharge the responsibilities of our board of directors relating to compensation of our executive officers. Our compensation committee will be responsible for, among other things:

- reviewing, approving and determining, or making recommendations to our board of directors regarding, the compensation of our executive officers;
- administering our stock and equity incentive plans;
- reviewing and approving or making recommendations to our board of directors regarding incentive compensation and equity plans; and
- establishing and reviewing general policies relating to compensation and benefits of our employees.

Our compensation committee will operate under a written charter, to be effective on the date of this offering, that satisfies the applicable rules of the SEC and the listing standards of The NASDAQ Stock Market and that will be available on our website upon completion of this offering.

Nominating and Governance Committee

Effective on the date of this offering, our nominating and governance committee will consist of , each of whom is a non-employee member of our board of directors, with serving as nominating and governance committee chair. Our board of directors has determined that each of the members of our nominating and governance committee meets the requirements for independence under the listing standards of The NASDAQ Stock Market and SEC rules and regulations. Our nominating and governance committee will be responsible for, among other things:

- identifying, evaluating and selecting, or making recommendations to our board of directors regarding, nominees for election to our board of directors and its committees;
- considering and making recommendations to our board of directors regarding the composition of our board of directors and its committees;
- reviewing and assessing the adequacy of our corporate governance guidelines and recommending any proposed changes to our board of directors; and
- evaluating the performance of our board of directors and of individual directors.

The nominating and governance committee will operate under a written charter, to be effective on the date of this offering, that satisfies the applicable listing requirements and rules of The NASDAQ Stock Market and that will be available on our website upon completion of this offering.

Compensation Committee Interlocks and Insider Participation

None of our executive officers currently serves, or in the past year has served, as a member of the board of directors or compensation committee, or other board committee performing equivalent functions, of any entity that has one or more executive officers serving on our board of directors or compensation committee.

Director Compensation

We currently provide cash compensation to two of our non-employee directors, Mr. Reis and Mr. Wong, which includes an annual retainer of $12,000, $1,200 per meeting for each in-person meeting attended, and $750 per meeting for each telephonic meeting attended. We also have a policy of reimbursing our directors for their reasonable out-of-pocket expenses in connection with their attendance at board and committee meetings. From time to time, we have granted stock options to certain of our non-employee directors as compensation for their services. Mr. Rey, who is also an employee, is compensated for his service as an employee and does not receive any additional compensation for his service on our board of directors.

The following table sets forth information regarding the compensation received by Mr. Reis and Mr. Wong during the fiscal year ended December 31, 2014.

Name	Fees Earned or Paid in Cash ($)(1)	Stock Awards ($)	Option Awards ($)	Non-Equity Incentive Plan Compensation ($)	Nonqualified Deferred Compensation Earnings ($)	All Other Compensation ($)	Total ($)
James R. Reis	$ 19,050	—	—	—	—	—	$ 19,050
Mark W. Wong	17,100	—	—	—	—	—	17,100

(1) Represents the cash annual retainer and the meeting attendance fees earned by the non-employee directors.

Additionally, Mr. Reis and Mr. Wong have received option grants, as reflected in the table below. No options have been granted to any of our non-employee directors since 2010.

Director Name	Option Grant Date	Number of Options Granted(1)	Option Exercise Price Per Share ($)(2)	Option Expiration Date
James R. Reis	5/2/2006	30,000	$ 0.11	12/31/2015
	7/1/2008	40,000	0.27	6/30/2018
	11/1/2009	20,000	0.56	10/31/2019
	1/1/2010	120,000	0.56	12/31/2019
Mark W. Wong	5/2/2006	20,000	0.11	12/31/2015
	7/1/2008	40,000	0.27	6/30/2018
	11/1/2009	20,000	0.56	10/31/2019
	1/1/2010	120,000	0.56	12/31/2019

(1) All of the options held by Mr. Reis and Mr. Wong were granted under the 2006 Stock Plan and vested in 16 equal quarterly installments from the date of grant subject to the director's continued service through each vesting date. As of December 31, 2013, all of the options were fully vested and immediately exercisable.

(2) The exercise price per share of the stock options reflects the fair market value per share of our common stock on the date of grant.

Following this offering, we will have a compensation policy applicable to our non-employee directors that is intended to compensate, incentivize, and retain them, consisting of the following:

- *Annual Cash Retainer.* Each non-employee director receives an annual cash retainer in the amount of $40,000 for service on our board of directors. The retainer is payable in arrears in equal quarterly installments (on March 31st, June 30th, September 30th and December 31st), subject to such director's continued service to the Company on the last day of the preceding quarter and prorated as necessary to reflect service commencement or termination during the quarter.

- *Initial Option Grant for Board Membership*. On the date a new non-employee director becomes a member of the board (excluding an employee director who ceases to be an employee, but who remains a director), such director is granted an initial option to purchase 60,000 shares of our common stock. This initial option will vest and become exercisable in three equal installments on each of the first three anniversaries of the date of grant, subject to the director's continued service through each vesting date. The per share exercise price for the initial option shall be equal to the fair market value for a share of our common stock on the date of grant. An

employee director who ceases to be an employee, but who remains a director, will not receive an option grant.

- *Annual Option Grant for Board Membership.* Effective on the date of our annual meeting of stockholders each year after this offering, each non-employee director is granted an annual option to purchase 20,000 shares of our common stock. This annual option will vest and become exercisable on the earlier of (i) the one year anniversary of the date of grant or (ii) the date of the our next annual meeting of stockholders, subject to the director's continued service through the vesting date. The per share exercise price for the annual option shall be equal to the fair market value for a share of our common stock on the date of grant.

- *Provisions Applicable to Option Grants.* Each option grant will be subject to the terms and conditions of our 2015 Omnibus Equity Incentive Plan and the terms of each stock option agreement entered into by us with such director. All option grants will be fully vested upon a "change in control" as defined in our 2015 Omnibus Equity Incentive Plan.

- *Chairmanship Fees.* In addition to the fees set forth above, the chairperson of each committee of our board of directors and our Board Chair will be entitled to receive the following additional annual cash fees (payable quarterly in arrears and prorated for partial service in a quarter), to compensate him or her for the additional responsibilities and duties of the position:

  - Board Chair—$20,000;
  - Audit—$15,000;
  - Compensation—$10,000; and
  - Nominating and Corporate Governance—$7,500.

- *Committee Membership Fees.* In addition to the fees set forth above, each non-employee director that is a member, but not the chairperson, of a committee of our board of directors receives the following additional annual cash fees (payable quarterly in arrears and prorated for partial service in a quarter), to compensate him or her for the additional responsibilities and duties associated with serving on the committee:

  - Audit—$7,500;
  - Compensation—$5,000; and
  - Nominating and Corporate Governance—$3,750.

Further, non-employee directors are reimbursed for the expenses they incur in connection with attending board and committee meetings.

EXECUTIVE COMPENSATION

Overview

The following discussion contains forward-looking statements that are based on our current plans, considerations, expectations, and determinations regarding future compensation programs. The actual amount and form of compensation and the compensation policies and practices that we adopt in the future may differ materially from currently planned programs as summarized below.

As an emerging growth company, we have opted to comply with the executive compensation disclosure rules applicable to "smaller reporting companies," as such term is defined in the rules promulgated under the Securities Act. The compensation provided to our named executive officers for 2013 and 2014 is detailed in the Summary Compensation Table and accompanying footnotes and narrative that follows this section.

Our named executive officers in 2013 and 2014 were:

- Eric J. Rey, our President and Chief Executive Officer;
- Vic C. Knauf, Ph.D., our Chief Scientific Officer; and
- Wendy S. Neal, our Vice President and Chief Legal Officer.

Summary Compensation Table

The following table provides information regarding the total compensation awarded to, earned by, and paid to each of our named executive officers for the fiscal years ended December 31, 2013 and 2014:

Name and Principal Position	Year	Salary ($)(1)	Bonus ($)(2)	Stock Awards ($)(3)	Option Awards ($)(3)	Non-Equity Incentive Plan Compensation ($)(2)	All Other Compensation ($)	Total ($)
Eric J. Rey,	2014	$ 338,057	—	—		—	—	$
President and Chief Executive Officer	2013	333,250	—	—	—	—	—	333,250
Vic C. Knauf,	2014	261,503	—	—		—	—	
Chief Scientific Officer	2013	235,000	—	—	—	—	—	235,000
Wendy S. Neal,	2014	405,995	—	—		—	—	
Vice President and Chief Legal Officer	2013	378,216	—	—	—	—	—	378,216

(1) In connection with this offering, the annual base salaries for our named executive officers shall be increased as follows: (i) $400,000 for Mr. Rey; and (ii) $280,000 for Mr. Knauf.

(2) No bonuses were paid to the named executive officers with respect to the fiscal years ended December 31, 2013 and 2014. In connection with this offering, our named executive officers shall be eligible for annual cash bonuses based on achievement of performance goals to be established by the compensation committee in the future. Initially, the target bonus amounts shall be as follows: (i) 40% of base salary for Mr. Rey; (ii) 35% of base salary for Mr. Knauf; and (iii) 15% of base salary for Ms. Neal

(3) Amounts shown reflect the aggregate grant date fair value of stock options awarded in fiscal 2014, computed in accordance with FASB ASC Topic 718. The valuation assumptions used in calculating the grant date fair value of the stock options are set forth in note 10 to our consolidated financial statements included elsewhere in this prospectus. No stock awards or options awards were granted to the named executive officers during the 2013 fiscal year.

Outstanding Equity Awards at Fiscal Year-End

The following table provides information regarding each unexercised stock option held by each of our named executive officers as of December 31, 2014:

	Option Awards			
Name	Number of Securities Underlying Unexercised Options Exercisable	Number of Securities Underlying Unexercised Options Unexercisable	Option Exercise Price ($)	Option Expiration Date
Eric J. Rey	850,000	—	$ 0.11	12/31/2015
	2,500,000	—	0.27	6/30/2018
	550,000	—	0.56	10/31/2019
	750,000	—	0.56	12/31/2019
	500,000	—	3.39	12/31/2020
	75,000	25,000(1)	3.39	12/31/2022
	—	100,000(2)	1.53	10/29/2024
Vic C. Knauf	190,000	—	0.11	12/31/2015
	1,010,000	—	0.27	6/30/2018
	212,000	—	0.56	10/31/2019
	300,000	—	0.56	12/31/2019
	75,000	—	3.39	12/31/2020
	75,000	25,000(1)	3.39	12/31/2022
	—	50,000(2)	1.53	10/29/2024
Wendy S. Neal	200,000	—	0.27	6/30/2018
	125,000	—	0.56	10/31/2019
	200,000	—	0.56	12/31/2019
	75,000	—	3.39	12/31/2020
	75,000	25,000(1)	3.39	12/31/2022
	—	50,000(2)	1.53	10/29/2024

(1) Each of these options was granted with a vesting commencement date of January 1, 2013 and vests in 12 equal quarterly installments following the vesting commencement date such that the award will be fully vested on December 31, 2015, subject to the executive officer's continuous service through each vesting date. Vesting on these options will accelerate in full upon the completion of this offering.

(2) 50% of these options will vest on February 7, 2015 and the remaining 50% vests in 24 equal monthly installments commencing on February 28, 2015 such that the award will be fully vested on January 31, 2017, subject to the executive officer's continuous service through each vesting date. Vesting on these options will not accelerate in connection with this offering.

Agreements with Current Named Executive Officers

Currently, all of our named executive officers are "at-will" employees and none of them have entered into a written employment agreement with us. However, in connection with this offering, we anticipate entering into new offer letters with each of our named executive officers that will set forth each executive officer's title, base salary, and bonus opportunity (each as detailed in the footnotes to the Summary Compensation Table above). The new offer letters will not change the "at-will" nature of the executive officers' employment.

Severance and Change in Control Agreements

In February 2015, our Board approved new severance and change in control agreements, or CIC Agreements, for each of our executive officers, the specific terms of which are discussed below. Each of the CIC Agreements expires by its terms on the third (3rd) anniversary of the effective date of such agreement, which we expect to be on or around the completion of this offering.

Pursuant to the CIC Agreements, if we terminate an executive's employment with the Company for a reason other than cause (as defined in the CIC Agreements) or executive's death or disability (as defined in the CIC Agreements) at any time other than during the twelve (12) month period immediately following a change of control (as defined in the CIC Agreements), then such executive will receive the following severance benefits from the company: (i) severance in the form of base salary continuation for a period of six months (twelve months for Mr. Rey); and (ii) reimbursement for premiums paid for coverage pursuant to the Consolidated Omnibus Budget Reconciliation Act of 1985, as amended, or COBRA, for executive and executive's eligible dependents for up to six months (twelve months for Mr. Rey).

If during the twelve month period immediately following a change of control (as defined in the CIC Agreements), (x) we terminate an executive's employment with the Company for a reason other than cause (as defined in the CIC Agreements) or the executive's death or disability (as defined in the CIC Agreements), or (y) an executive resigns from such employment for good reason (as defined in the CIC Agreements), then, in lieu of the above described severance benefits, such executive shall receive the following severance benefits from the company: (i) severance in the form of base salary continuation for a period of twelve months (twenty-four months for Mr. Rey); (ii) reimbursement for premiums paid for coverage pursuant to COBRA, for executive and executive's eligible dependents for up to twelve months (twenty-four months for Mr. Rey); and (iii) vesting shall accelerate as to 100% of all of executive's outstanding equity awards.

An executive's receipt of severance payments or benefits pursuant to a CIC Agreement is subject to the executive signing a release of claims in favor of the Company and complying with certain restrictive covenants set forth in the CIC Agreement.

Each CIC Agreement contains a "better after-tax" provision, which provides that if any of the payments to an executive constitutes a parachute payment under Section 280G of the Code, the payments will either be (i) reduced or (ii) provided in full to the executive, whichever results in the executive receiving the greater amount after taking into consideration the payment of all taxes, including the excise tax under Section 4999 of the Code, in each case based upon the highest marginal rate for the applicable tax.

Pension Benefits

None of our named executive officers participate in or have account balances in qualified or non-qualified defined benefit plans sponsored by us.

Nonqualified Deferred Compensation

We do not maintain any nonqualified defined contribution or deferred compensation plans or arrangements for our named executive officers.

Employee Benefit and Stock Plans

2015 Omnibus Equity Incentive Plan

In February 2015, our board of directors approved our 2015 Omnibus Equity Incentive Plan, or the 2015 Plan. The 2015 Plan will become effective immediately prior to the effectiveness of the registration statement of which this prospectus forms a part, subject to the approval of our stockholders. Our 2015 Plan provides for the grant of incentive stock options, within the meaning of

Section 422 of the Code, to our employees and the employees of our subsidiaries, and for the grant of nonstatutory stock options, stock appreciation rights, restricted stock, restricted stock units, performance units and performance shares to our employees, directors and consultants and the employees and consultants of our subsidiaries.

The following summary of terms of the 2015 Plan is based on the terms of the 2015 Plan as approved by the board of directors, but the terms are not final until approved by our stockholders.

Authorized Shares. The maximum aggregate number of shares that may be issued under the 2015 Plan is shares of our common stock plus (i) any shares that as of the completion of this offering, have been reserved but not issued pursuant to any awards granted under our 2006 Plan and are not subject to any awards granted thereunder, and (ii) any shares subject to awards under the 2006 Plan that otherwise would have been returned to the 2006 Plan on account of the expiration, cancellation or forfeiture of such awards, with the maximum number of shares to be added to the 2015 Plan pursuant to clauses (i) and (ii) above equal to shares as of . In addition, the number of shares available for issuance under the 2015 Plan will be annually increased on the first day of each of our fiscal years beginning with the 2016 fiscal year, by an amount equal to the least of:

- shares of our common stock;
- 4% of the outstanding shares of our common stock as of the last day of our immediately preceding fiscal year; or
- such other amount as our board of directors may determine.

Shares issued pursuant to awards under the 2015 Plan that we repurchase or that are otherwise forfeited, will become available for future grant under the 2015 Plan on the same basis as the award initially counted against the share reserve. In addition, to the extent that an award is paid out in cash rather than shares, such cash payment will not reduce the number of shares available for issuance under the 2015 Plan.

Award Limitations. The following limits apply to any awards granted under the 2015 Plan:

- Options and stock appreciation rights—No employee may be granted within any fiscal year one or more options or stock appreciation rights, which in the aggregate cover more than shares; provided, however, that in connection with an employee's initial service as an employee, an employee's aggregate limit may be increased by shares;
- Restricted stock and restricted stock units—No employee may be granted within any fiscal year one or more awards of restricted stock or restricted stock units, which in the aggregate cover more than shares; provided, however, that in connection with an employee's initial service as an employee, an employee's aggregate limit may be increased by shares; and
- Performance units and performance shares—No employee may receive performance units or performance shares having a grant date value (assuming maximum payout) greater than dollars or covering more than shares, whichever is greater; provided, however, that in connection with an employee's initial service as an employee, an employee may receive performance units or performance shares having a grant date value (assuming maximum payout) of up to an additional amount equal dollars or covering up to shares, whichever is greater. No individual may be granted more than one award of performance units or performance shares for a performance period.

Plan Administration. The 2015 Plan will be administered by our board of directors, which, at its discretion or as legally required, may delegate such administration to our compensation committee and/or one or more additional committees. In the case of awards intended to qualify as "performance-based compensation" within the meaning of Code Section 162(m), the compensation committee will consist of two or more "outside directors" within the meaning of Code Section 162(m).

Subject to the provisions of our 2015 Plan, the administrator has the power to determine the terms of awards, including the recipients, the exercise price, if any, the number of shares subject to each award, the fair market value of a share of our common stock, the vesting schedule applicable to the awards, together with any vesting acceleration, and the form of consideration, if any, payable upon exercise of the award and the terms of the award agreement for use under the 2015 Plan. The administrator also has the authority, subject to the terms of the 2015 Plan, to amend existing awards, to prescribe rules and to construe and interpret the 2015 Plan and awards granted thereunder. In addition, the administrator cannot reduce the exercise price of options and initiate an option exchange program, whereby outstanding options are exchanged for options with a lower exercise price, without stockholder approval if the fair market value of such options has declined since the date such options were granted.

Stock Options. The administrator may grant incentive and/or nonstatutory stock options under our 2015 Plan; provided that incentive stock options are only granted to employees. The exercise price of such options must equal at least the fair market value of our common stock on the date of grant. The term of an option may not exceed ten years; provided, however, that an incentive stock option held by a participant who owns more than 10% of the total combined voting power of all classes of our stock, or of certain of our subsidiary corporations, may not have a term in excess of five years and must have an exercise price of at least 110% of the fair market value of our common stock on the grant date. The administrator will determine the methods of payment of the exercise price of an option, which may include cash, shares or other property acceptable to the administrator. Subject to the provisions of our 2015 Plan, the administrator determines the vesting terms of options granted under the 2015 Plan. After the termination of service of an employee, director or consultant, the participant may exercise his or her option, to the extent vested as of such date of termination, for the period of time stated in his or her option agreement. Generally, if termination is due to death or disability, the option will remain exercisable for twelve months. In all other cases, the option will generally remain exercisable for three months following the termination of service. However, in no event may an option be exercised later than the expiration of its term.

Stock Appreciation Rights. Stock appreciation rights may be granted under our 2015 Plan. Stock appreciation rights allow the recipient to receive the appreciation in the fair market value of our common stock between the exercise date and the date of grant. Subject to the provisions of our 2015 Plan, the administrator determines the terms of stock appreciation rights, including when such rights vest and become exercisable and whether to settle such awards in cash or with shares of our common stock, or a combination thereof, except that the per share exercise price for the shares to be issued pursuant to the exercise of a stock appreciation right will be no less than 100% of the fair market value per share on the date of grant.

Restricted Stock. Restricted stock may be granted under our 2015 Plan. Restricted stock awards are grants of shares of our common stock that are subject to various restrictions, including restrictions on transferability and forfeiture provisions. Shares of restricted stock will vest and the restrictions on such shares will lapse, in accordance with terms and conditions established by the administrator. Such terms may include, among other things, vesting upon the achievement of specific performance goals determined by the administrator and/or continued service. The administrator, in its sole discretion, may accelerate the time at which any restrictions will lapse or be removed. Recipients of restricted stock awards generally will have voting and cash dividend rights with respect to such shares upon grant without regard to vesting, unless the administrator provides otherwise. Shares of restricted stock that do not vest for any reason will be forfeited by the recipient and will revert to us.

Restricted Stock Units. Restricted stock units may be granted under our 2015 Plan, which may include the right to dividend equivalents, as determined in the discretion of the administrator. Each restricted stock unit granted is a bookkeeping entry representing an amount equal to the fair market value of one share of our common stock. The administrator determines the terms and conditions of

restricted stock units including the vesting criteria, which may include achievement of specified performance criteria or continued service, and the form and timing of payment. The administrator, in its sole discretion, may accelerate the time at which any restrictions will lapse or be removed. The administrator determines in its sole discretion whether an award will be settled in stock, cash or a combination of both.

Performance Units and Performance Shares. Performance units and performance shares may be granted under our 2015 Plan. Performance units and performance shares are awards that will result in a payment to a participant only if performance goals established by the administrator are achieved and any other applicable vesting provisions are satisfied. The administrator will establish organizational or individual performance goals in its discretion, which, depending on the extent to which they are met, will determine the number and/or the value of performance units and performance shares to be paid out to participants. For purposes of such awards, the performance goals may be one or more of the following, as determined by the administrator: (i) sales or non-sales revenue; (ii) return on revenues; (iii) operating income; (iv) income or earnings including operating income; (v) income or earnings before or after taxes, interest, depreciation and/or amortization; (vi) income or earnings from continuing operations; (vii) net income; (viii) pre-tax income or after-tax income; (ix) net income excluding amortization of intangible assets, depreciation and impairment of goodwill and intangible assets and/or excluding charges attributable to the adoption of new accounting pronouncements; (x) raising of financing or fundraising; (xi) project financing; (xii) revenue backlog; (xiii) gross margin; (xiv) operating margin or profit margin; (xv) capital expenditures, cost targets, reductions and savings and expense management; (xvi) return on assets (gross or net), return on investment, return on capital, or return on stockholder equity; (xvii) cash flow, free cash flow, cash flow return on investment (discounted or otherwise), net cash provided by operations, or cash flow in excess of cost of capital; (xviii) performance warranty and/or guarantee claims; (xix) stock price or total stockholder return; (xx) earnings or book value per share (basic or diluted); (xxi) economic value created; (xxii) pre-tax profit or after-tax profit; (xxiii) strategic business criteria, consisting of one or more objectives based on meeting specified market penetration or market share, completion of strategic agreements such as licenses, funded collaborations, joint ventures, acquisitions, and the like, geographic business expansion, objective customer satisfaction or information technology goals, intellectual property asset metrics; (xxiv) objective goals relating to divestitures, joint ventures, mergers, acquisitions and similar transactions; (xxv) objective goals relating to staff management, results from staff attitude and/or opinion surveys, staff satisfaction scores, staff safety, staff accident and/or injury rates, compliance headcount, performance management, completion of critical staff training initiatives; (xxvi) objective goals relating to projects, including project completion timing and/or achievement of milestones, project budget, technical progress against work plans; (xxvii) key regulatory objectives or milestones; and (xxviii) enterprise resource planning. Any criteria used may be measured, as applicable, (i) in absolute terms, (ii) in relative terms (including, but not limited to, any increase (or decrease) over the passage of time and/or any measurement against other companies or financial or business or stock index metrics particular to the Company), (iii) on a per share and/or share per capita basis, (iv) against the performance of the Company as a whole or against any affiliate(s), or a particular segment(s), a business unit(s) or a product(s) of the Company or individual project company, (v) on a pre-tax or after-tax basis, and/or (vi) using an actual foreign exchange rate or on a foreign exchange neutral basis. After the grant of a performance unit or performance share, the administrator, in its sole discretion, may reduce or waive any performance objectives or other vesting provisions for such performance units or performance shares. Performance units shall have an initial dollar value established by the administrator prior to the grant date. Performance shares shall have an initial value equal to the fair market value of our common stock on the grant date. The administrator, in its sole discretion, may pay earned performance units or performance shares in the form of cash, in shares or in some combination thereof.

Transferability of Awards. Unless the administrator provides otherwise, our 2015 Plan generally does not allow for the transfer of awards and only the recipient of an option or stock appreciation right may exercise such an award during his or her lifetime.

Certain Adjustments. In the event of certain corporate events or changes in our capitalization, to prevent diminution or enlargement of the benefits or potential benefits available under the 2015 Plan, the administrator will make adjustments to one or more of the number and class of shares that may be delivered under the 2015 Plan and/or the number, class and price of shares covered by each outstanding award and the numerical share limits contained in the 2015 Plan.

Dissolution or Liquidation. In the event of our proposed winding up, liquidation or dissolution, the administrator will notify participants as soon as practicable and all awards will terminate immediately prior to the consummation of such proposed transaction.

Merger or Change in Control. Our 2015 Plan provides that in the event of a merger or change in control (other than a winding up, dissolution or liquidation), as defined under the 2015 Plan, each outstanding award will be treated as the administrator determines (including assumed, substituted or cancelled), except that if a successor corporation or its parent or subsidiary does not assume or substitute an equivalent award for any outstanding award, then such award will fully vest, all restrictions on such award will lapse, all performance goals or other vesting criteria applicable to such award will be deemed achieved at 100% of target levels. In addition, if an option or stock appreciation right is not assumed or substituted in the event of a change in control, the administrator will notify the participant in writing or electronically that the option or stock appreciation right will be exercisable for a period of time determined by the administrator in its sole discretion, and the option or stock appreciation right will terminate upon the expiration of such period. Under our 2015 Plan, an award will be considered assumed if, following the change in control, the award confers the right to purchase or receive, for each share subject to the award immediately prior to the change in control, the consideration (whether stock, cash, or other securities or property) received in the change in control by our common stockholders (and if holders were offered a choice of consideration, the type of consideration chosen by the holders of a majority of the outstanding shares of our common stock). However, if the consideration received in the change in control is not solely common stock of the successor corporation or its parent, the administrator may, with the consent of the successor corporation, provide for the consideration to be received upon the exercise of an option or stock appreciation right or upon the payout of a restricted stock unit, performance unit or performance share to be solely common stock of the successor corporation or its parent equal in fair market value to the per share consideration received by our common stockholders in the change in control.

Plan Amendment, Termination. Our board of directors has the authority to amend, suspend or terminate the 2015 Plan provided such action does not impair the existing rights of any participant. Our 2015 Plan will automatically terminate on the tenth anniversary of the effective date of the 2015 Plan, unless we terminate it sooner.

Lock-Up Provision. For a period of 180 days following the effective date of the registration statement of which this prospectus is a part, the participants may not offer, pledge, sell, contract to sell, make any short sale of, loan, grant any option for the purchase of, or otherwise dispose of any of our securities however and whenever acquired (other than those included in the registration) without the prior written consent of the Company. In addition, the participants agree to be bound by similar restrictions, and to sign a similar agreement, in connection with no more than one additional registration statement filed within 12 months after the effective date of the registration statement, provided that the duration of the lock-up period with respect to such additional registration shall not exceed 90 days from the effective date of such additional registration statement. Notwithstanding the foregoing, if during the last 17 days of the restricted period, the Company issues an earnings release or material news or a material event relating to the Company occurs, or prior to the expiration of the

restricted period the Company announces that it will release earnings results during the 16-day period beginning on the last day of the restricted period, then, upon the request of the managing underwriter, to the extent required by any FINRA rules, the restrictions shall continue to apply until the end of the third trading day following the expiration of the 15-day period beginning on the issuance of the earnings release or the occurrence of the material news or material event. In no event will the restricted period extend beyond 216 days after the effective date of the registration statement. In order to enforce the restriction set forth above, the Company may impose stop-transfer instructions with respect to the shares acquired under the 2015 Plan until the end of the applicable stand-off period.

2006 Stock Plan

Our board of directors adopted, and our stockholders approved, our 2006 Stock Plan, or the 2006 Plan, on February 1, 2006. The 2006 Plan was last amended and restated on May 4, 2012. Our 2006 Plan provides for the grant of incentive stock options to our employees and the employees of our affiliates, and for the grant of nonstatutory stock options and stock purchase rights to our employees, directors and consultants and the employees, directors and consultants of our affiliates. No new awards will be granted under our 2006 Plan following this offering, but previously granted awards will continue to be subject to the terms and conditions of the 2006 Plan and the stock award agreements pursuant to which such awards were granted.

Authorized Shares. The maximum aggregate number of shares that may be issued under the 2006 Plan is 18,000,000 shares of our common stock. The maximum aggregate number of shares that may be issued pursuant to incentive stock options under the 2006 Plan is 18,000,000 shares of our common stock. As of December 31, 2013, options to purchase 14,731,270 shares of our common stock were outstanding and 2,418,046 shares were available for future grants.

Plan Administration. Our board of directors, or a committee appointed by the board of directors, administers the 2006 Plan and any stock awards granted under the 2006 Plan. The administrator has the power and authority to determine the terms of the awards, including eligibility, the form of agreements for use under the 2006 Plan, the exercise price, the number of shares covered by each such award, the vesting schedule and exercisability of awards and the form of consideration payable upon exercise. The administrator also has the power and authority to construe and interpret the terms of the 2006 Plan and awards granted pursuant to the 2006 Plan and to allow participants to satisfy their tax withholding obligations by electing to have us withhold shares to be issued upon exercise of an option or pursuant to a stock purchase right. In addition, the administrator has the authority to reduce the exercise price of options if the fair market value of such options has declined since the date such options were granted and initiate an option exchange program, whereby outstanding options are exchanged for options with a lower exercise price.

Stock Options. With respect to all stock options granted under the 2006 Plan, the exercise price of such options must equal at least the fair market value of our common stock on the date of grant. The term of an option may not exceed ten years; provided, however, that an incentive stock option held by a participant who owns more than 10% of the total combined voting power of all classes of our stock, or of certain of our subsidiary corporations, may not have a term in excess of five years and must have an exercise price of at least 110% of the fair market value of our common stock on the grant date. The administrator will determine the methods of payment of the exercise price of an option, which may include cash or other methods of payment acceptable to the administrator. Subject to the provisions of the 2006 Plan, the administrator determines the vesting terms of options granted under the 2006 Plan). After the termination of service of an employee, director or consultant, the participant may exercise his or her option, to the extent vested as of such date of termination, for the period of time stated in his or her option agreement. Unless the terms of the participant's option agreement provide otherwise, in the case of nonstatutory stock options, if the participant's service relationship with us, or any of our affiliates, ceases for any reason other than disability, death, retirement or cause, the

participant may generally exercise any vested options for a period of at least 30 days following the cessation of service and if a participant's service relationship with us or any of our affiliates ceases due to disability or death, or a participant retires, the participant or legal representative may generally exercise any vested options at any time prior to the expiration of such options. Unless the terms of the participant's option agreement provide otherwise, in the case of incentive stock options, if the participant's service relationship with us, or any of our affiliates, ceases for any reason other than disability, death, retirement or cause, the participant may generally exercise any vested options for a period of three months following the cessation of service and if a participant's service relationship with us or any of our affiliates ceases due to disability or death, or a participant retires, the participant or legal representative may generally exercise any vested options for a period of 12 months in the event of disability or death and 3 months in the event of retirement. In no event may an option be exercised beyond the expiration of its term.

Stock Purchase Rights. Stock purchase rights are rights to purchase shares of our common stock that are either fully vested at grant or will vest in accordance with terms and conditions established by the administrator, in its sole discretion. The administrator will determine the number of shares that the participant may purchase, the price to be paid and the time in which the participant must accept the offer. The offer must be accepted by execution of a restricted stock purchase agreement in the form determined by the administrator. The purchase price of stock purchased by a participant must not be less than 100% of the fair market value per share on the date of grant. Once a stock purchase right is exercised, the participant has all the rights of a stockholder.

Transferability of Awards. Unless otherwise determined by the administrator, the 2006 Plan generally does not allow for the sale or transfer of awards under the 2006 Plan other than by will or the laws of descent and distribution, and may be exercised during the lifetime of the participant only by such participant. Subject to compliance with all applicable laws, the administrator may in its discretion grant transferable nonstatutory stock options and stock purchase rights in accordance in accordance with the terms set forth in the applicable award agreement.

Certain Adjustments. In the event of certain changes made in our common stock, appropriate adjustments will be made in the number and class of shares that may be delivered under the 2006 Plan and/or the number, class and price of shares covered by each outstanding award and the numerical share limits contained in the 2006 Plan.

Dissolution or Liquidation. In the event of our proposed winding up, liquidation or dissolution, the administrator will notify participants as soon as practicable and all awards will terminate immediately prior to the consummation of such proposed transaction. The administrator in its discretion may provide for the participant to exercise his or her options 15 days prior to such transaction, including shares that would not otherwise be exercisable and provide for the lapsing of any repurchase rights with respect to shares purchased upon exercise of an option or stock purchase right.

Merger or Change in Control. In the event of a merger, consolidation or the sale of substantially all of our assets, the 2006 Plan provides that the outstanding options and stock rights will be treated as set forth in the agreement of merger, consolidation or asset sale, which shall provide for any of the following: (i) the assumption of the awards by the surviving corporation or its parent; (ii) the continuation of the awards by the company if the company is the surviving corporation; (iii) a cash settlement equal in the case of options to the difference between the amount paid for one share and the exercise price multiplied by the number of shares, vested or unvested, or both, subject to the option, and in the case of stock purchase rights, the amount to be paid for one share multiplied by the number of vested or unvested shares determined by the company; or (iv) subject to the consummation of the transaction, the acceleration of the vesting of outstanding stock awards prior to the consummation of the transaction, with notification to the holders of options that such options shall be exercisable for 15 days from the date of such notice and termination of awards after such period.

Plan Amendment, Termination. Our board of directors may at any time amend, alter, suspend or terminate the 2006 Plan, provided such action does not impair the existing rights of any participant. Our 2006 Plan will terminate in connection with, and contingent upon, the effectiveness of the registration statement of which this prospectus forms a part; provided that the 2006 Plan will continue to govern the terms and conditions of awards originally granted under the 2006 Plan. Following the consummation of our initial public offering, we expect to make future awards under our 2015 Plan.

2015 Employee Stock Purchase Plan In February 2015, our board of directors approved our 2015 Employee Stock Purchase Plan, or the ESPP. The ESPP will become effective immediately prior to the effectiveness of the registration statement of which this prospectus forms a part, subject to the approval of our stockholders. Our executive officers and all of our other employees will be allowed to participate in our ESPP. In general, we intend to make offerings under the ESPP that qualify under Section 423 of the Code, but may make offerings that are not intended to qualify under Section 423 of the Code to the extent deemed advisable for designated subsidiaries outside the United States. Additionally, we may make separate offerings under the ESPP, each of which may have different terms, but each separate offering will be intended to comply with the requirements of Section 423 of the Code.

The following summary of terms of the ESPP is based on the terms of the ESPP as approved by the board of directors, but the terms are not final until approved by the stockholders.

Authorized Shares. A total of shares of our common stock will be made available for sale under our ESPP. In addition, our ESPP provides for annual increases in the number of shares available for issuance under the ESPP on the first day of each fiscal year beginning with the 2016 fiscal year, equal to the least of:

- shares of our common stock;
- 1% of the outstanding shares of our common stock on the first day of such fiscal year; or
- such other amount as our board of directors may determine.

Plan Administration. Our board of directors or a committee that has been duly authorized by our board of directors has full and exclusive authority to interpret the terms of the ESPP and determine eligibility.

Eligibility. All of our employees are eligible to participate if they are customarily employed by us or any participating subsidiary for more than 20 hours per week and more than five months in any calendar year. However, an employee may not be granted rights to purchase stock under our ESPP if such employee:

- immediately after the grant would own stock possessing 5% or more of the total combined voting power or value of all classes of our capital stock; or
- holds rights to purchase stock under all of our employee stock purchase plans that would accrue at a rate that exceeds $25,000 worth of our stock for each calendar year.

Offerings. Our ESPP is intended to qualify under Section 423 of the Code, and provides for consecutive, non-overlapping six-month offering periods. The offering periods generally start on the first trading day on or after February 1 and August 1 of each year, except for the first such offering period which will commence on the first trading day on or after the effective date of the registration statement of which this prospectus is a part and will end on February 1, 2016. The administrator may, in its discretion, modify the terms of future offering periods.

Limitations. Our ESPP permits participants to purchase common stock through payroll deductions of up to 15% of their eligible compensation, which includes a participant's regular and recurring straight time gross earnings, payments for overtime and shift premium, exclusive of payments for incentive compensation, bonuses and other similar compensation. A participant may purchase up to a maximum of 3,000 shares of common stock during each six-month offering period.

Purchase of Stock. Amounts deducted and accumulated by the participant are used to purchase shares of our common stock at the end of each six-month offering period. The purchase price of the shares will be 15% of the lower of the fair market value of our common stock on the first trading day of the offering period or on the last day of the offering period. Participants may end their participation at any time during an offering period, and will be paid their accrued payroll deductions that have not yet been used to purchase shares of common stock. Participation ends automatically upon termination of employment with us.

Withdrawal. During an offering, a participant may cease making contributions and withdraw from the offering by delivering a notice of withdrawal and terminating his or her payroll deductions in such form as we may require. Upon such withdrawal, we will refund accumulated payroll deductions without interest to the employee, and such employee's right to participate in that offering will terminate. An employee's withdrawal from an offering will not affect such employee's eligibility to participate in subsequent offerings under the ESPP.

Transferability. A participant may not transfer rights granted under the ESPP other than by will, the laws of descent and distribution or as otherwise provided under the ESPP.

Certain Adjustments. In the event of certain corporate events or changes in our capitalization, to prevent diminution or enlargement of the benefits or potential benefits available under the ESPP, the administrator will make adjustments to one or more of the number and class of shares that may be delivered under the ESPP and/or the number, class, and price of shares covered by each outstanding purchase right and the numerical share limits contained in the ESPP.

Dissolution or Liquidation. In the event of our proposed winding up, liquidation or dissolution, any offering period then in progress will be shortened by setting a new exercise date, and will terminate immediately prior to the consummation of such proposed dissolution or liquidation, unless provided otherwise by the administrator.

Merger or Change in Control. In the event of our merger or change of control, as defined under the ESPP, a successor corporation may assume or substitute each outstanding purchase right. If the successor corporation refuses to assume or substitute for the outstanding purchase rights, the offering period then in progress will be shortened, and a new exercise date will be set. The plan administrator will notify each participant in writing that the exercise date has been changed and that the participant's option will be exercised automatically on the new exercise date unless the participant has already withdrawn from the offering period.

Plan Amendment, Termination. Our ESPP will automatically terminate on the tenth anniversary of the effective date of the ESPP, unless we terminate it sooner. In addition, our board of directors has the authority to amend, suspend or terminate our ESPP, except that, subject to certain exceptions described in the ESPP, no such action may adversely affect any outstanding rights to purchase stock under our ESPP.

Executive Incentive Bonus Plan

In February 2015, our board of directors approved the Executive Incentive Bonus Plan, or the Bonus Plan. The Bonus Plan will become effective immediately prior to the effectiveness of the registration statement of which this prospectus forms a part. The purpose of the Bonus Plan is to motivate and reward eligible officers and employees for their contributions toward the achievement of certain performance goals, with the intention that the incentives paid thereunder to certain of our executive officers be deductible during the applicable reliance period under Section 162(m) of the Code and the regulations and interpretations promulgated thereunder.

Administration. The Bonus Plan will be administered by the compensation committee, which shall have the discretionary authority to interpret the provisions of the Bonus Plan, including all decisions on

eligibility to participate, the establishment of performance goals, the amount of awards payable under the plan and the payment of awards.

Performance criteria. Commencing with our 2015 fiscal year, we expect the compensation committee to establish cash bonus targets and corporate performance metrics for a specific performance period (not to exceed months) or fiscal year pursuant to the Bonus Plan. Corporate performance goals may be based on one or more of the following criteria, as determined by our compensation committee: (i) sales or non-sales revenue; (ii) return on revenues; (iii) operating income; (iv) income or earnings including operating income; (v) income or earnings before or after taxes, interest, depreciation, and/or amortization; (vi) income or earnings from continuing operations; (vii) net income; (viii) pre-tax income or after-tax income; (ix) net income excluding amortization of intangible assets, depreciation, and impairment of goodwill and intangible assets and/or excluding charges attributable to the adoption of new accounting pronouncements; (x) raising of financing or fundraising; (xi) project financing; (xii) revenue backlog; (xiii) gross margin; (xiv) operating margin or profit margin; (xv) capital expenditures, cost targets, reductions, and savings and expense management; (xvi) return on assets (gross or net), return on investment, return on capital, or return on stockholder equity; (xvii) cash flow, free cash flow, cash flow return on investment (discounted or otherwise), net cash provided by operations, or cash flow in excess of cost of capital; (xviii) performance warranty and/or guarantee claims; (xix) stock price or total stockholder return; (xx) earnings or book value per share (basic or diluted); (xxi) economic value created; (xxii) pre-tax profit or after-tax profit; (xxiii) strategic business criteria, consisting of one or more objectives based on meeting specified market penetration or market share, completion of strategic agreements such as licenses, funded collaborations, joint ventures acquisitions, and the like, geographic business expansion, objective customer satisfaction or information technology goals, or intellectual property asset metrics; (xxiv) objective goals relating to divestitures, joint ventures, mergers, acquisitions, and similar transactions; (xxv) objective goals relating to staff management, results from staff attitude and/or opinion surveys, staff satisfaction scores, staff safety, staff accident and/or injury rates, compliance, headcount, performance management, or completion of critical staff training initiatives; (xxvi) objective goals relating to projects, including project completion, timing and/or achievement of milestones, project budget, or technical progress against work plans; (xxvii) key regulatory objectives or milestones; and (xxviii) enterprise resource planning. Awards issued to participants who are not subject to the limitations of Code Section 162(m) or awards to participants that are not intended to comply with the requirements of Code Section 162(m) may, in either case, take into account other factors (including subjective factors). Performance goals may differ from participant to participant, performance period to performance period and from award to award. Any criteria used may be measured, as applicable, (i) in absolute terms, (ii) in relative terms (including, but not limited to, any increase (or decrease) over the passage of time and/or any measurement against other companies or financial or business or stock index metrics particular to the Company), (iii) on a per share and/or share per capita basis, (iv) against the performance of the Company as a whole or against any affiliate(s), or a particular segment(s), a business unit(s) or a product(s) of the Company or individual project company, (v) on a pre-tax or after-tax basis, and/or (vi) using an actual foreign exchange rate or on a foreign exchange neutral basis. It is the intent that, starting in 2015, the compensation committee will establish corporate performance metrics that are both aggressive and obtainable and that the executive officers' performance at expected levels will provide the opportunity to achieve a meaningful number of the corporate goals and objectives. Following the end of the performance period, the compensation committee will approve the achievement of the corporate performance metrics and authorize the funding of the cash bonuses for that period.

Limits. Under the Bonus Plan, the maximum award that can be paid to a participant during any performance period is $. The total awards under the Bonus Plan may not exceed $ during any calendar year or $ during the applicable reliance period (within the meaning of Section 162(m)).

Plan Amendment, Termination. The compensation committee may terminate the Bonus Plan at any time, provided such termination shall not affect the payment of any awards accrued under the Bonus Plan prior to the date of the termination. The compensation committee may, at any time, or from time to time, amend or suspend and, if suspended, reinstate, the Bonus Plan in whole or in part; provided, however, that any amendment of the Bonus Plan shall be subject to the approval of our stockholders to the extent required to comply with the requirements of Section 162(m) of the Code, or any other applicable laws, regulations or rules.

401(k) Plan

We maintain a tax-qualified retirement plan that provides eligible U.S. employees with an opportunity to save for retirement on a tax-advantaged basis. Plan participants are able to defer eligible compensation subject to applicable annual Code limits. Each participant's pre-tax contributions are allocated to his or her individual account and are then invested in selected investment alternatives according to the participant's directions. We have the ability to make discretionary contributions to the 401(k) plan but have not done so to date. The 401(k) plan is intended to be qualified under Section 401(a) of the Code with the 401(k) plan's related trust intended to be tax exempt under Section 501(a) of the Code. As a tax-qualified retirement plan, contributions to the 401(k) plan and earnings on those contributions are not taxable to the employees until distributed from the 401(k) plan.

Rule 10b5-1 Sales Plans

Our directors and executive officers may adopt written plans, known as Rule 10b5-1 plans, in which they will contract with a broker to buy or sell shares of our common stock on a periodic basis. Under a Rule 10b5-1 plan, a broker executes trades pursuant to parameters established by the director or executive officer when entering into the plan, without further direction from them. The director or executive officer may amend or terminate the plan in some circumstances. Our directors and executive officers may also buy or sell additional shares outside of a Rule 10b5-1 plan when they are not in possession of material, nonpublic information.

Limitation of Liability and Indemnification of Officers and Directors

Our amended and restated certificate of incorporation, to be effective upon the completion of this offering, will provide that we will indemnify our directors and officers, and may indemnify our employees and other agents, to the fullest extent permitted by the Delaware General Corporation Law, which prohibits our amended and restated certificate of incorporation from limiting the liability of our directors for the following:

- any breach of their duty of loyalty to our company or our stockholders;
- any act or omission not in good faith or that involves intentional misconduct or a knowing violation of law;
- unlawful payments of dividends or unlawful stock repurchases or redemptions as provided in Section 174 of the Delaware General Corporation Law; or
- any transaction from which they derived an improper personal benefit.

Any amendment to, or repeal of, these provisions will not eliminate or reduce the effect of these provisions in respect of any act, omission or claim that occurred or arose prior to that amendment or repeal. If the Delaware General Corporation Law is amended to provide for further limitations on the personal liability of directors of corporations, then the personal liability of our directors will be further limited to the greatest extent permitted by the Delaware General Corporation Law.

Our amended and restated bylaws, to be effective upon the completion of this offering which will provide that we will indemnify, to the fullest extent permitted by law, any person who is or was a party or is threatened to be made a party to any action, suit or proceeding by reason of the fact that he or

she is or was one of our directors or officers or is or was serving at our request as a director or officer of another corporation, partnership, joint venture, trust, or other enterprise. Our amended and restated bylaws are expected to provide that we may indemnify to the fullest extent permitted by law any person who is or was a party or is threatened to be made a party to any action, suit, or proceeding by reason of the fact that he or she is or was one of our employees or agents or is or was serving at our request as an employee or agent of another corporation, partnership, joint venture, trust, or other enterprise. Our amended and restated bylaws will also provide that we must advance expenses incurred by or on behalf of a director or officer in advance of the final disposition of any action or proceeding, subject to very limited exceptions.

Further, prior to the closing of this offering, we expect to enter into indemnification agreements with each of our directors and executive officers that may be broader than the specific indemnification provisions contained in the Delaware General Corporation Law. These indemnification agreements will require us, among other things, to indemnify our directors and executive officers against liabilities that may arise by reason of their status or service. These indemnification agreements will also require us to advance all expenses incurred by the directors and executive officers in investigating or defending any such action, suit, or proceeding. We believe that these agreements are necessary to attract and retain qualified individuals to serve as directors and executive officers.

The limitation of liability and indemnification provisions that are expected to be included in our amended and restated certificate of incorporation, amended restated bylaws, and in indemnification agreements that we enter into with our directors and executive officers may discourage stockholders from bringing a lawsuit against our directors and executive officers for breach of their fiduciary duties. They may also reduce the likelihood of derivative litigation against our directors and executive officers, even though an action, if successful, might benefit us and other stockholders. Further, a stockholder's investment may be harmed to the extent that we pay the costs of settlement and damage awards against directors and executive officers as required by these indemnification provisions. At present, we are not aware of any pending litigation or proceeding involving any person who is or was one of our directors, officers, employees or other agents or is or was serving at our request as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise, for which indemnification is sought, and we are not aware of any threatened litigation that may result in claims for indemnification.

We have obtained insurance policies under which, subject to the limitations of the policies, coverage is provided to our directors and executive officers against loss arising from claims made by reason of breach of fiduciary duty or other wrongful acts as a director or executive officer, including claims relating to public securities matters, and to us with respect to payments that may be made by us to these directors and executive officers pursuant to our indemnification obligations or otherwise as a matter of law.

Certain of our non-employee directors may, through their relationships with their employers or affiliated entities, be insured or indemnified against certain liabilities incurred in their capacity as members of our board of directors. In our indemnification agreements with these non-employee directors, we have agreed that our indemnification obligations will be primary to any such other indemnification arrangements.

The underwriting agreement provides for indemnification by the underwriters of us and our officers, directors and employees for certain liabilities arising under the Securities Act, or otherwise.

Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers or persons controlling our company pursuant to the foregoing provisions, we have been informed that, in the opinion of the SEC, such indemnification is against public policy as expressed in the Securities Act and is therefore unenforceable.

CERTAIN RELATIONSHIPS AND RELATED PARTY TRANSACTIONS

In addition to the compensation arrangements, including employment, termination of employment and change in control arrangements, and indemnification arrangements, discussed, when required, in the sections titled "Management" and "Executive Compensation" and the registration rights described in the section titled "Description of Capital Stock—Registration Rights," the following is a description of each transaction since January 1, 2011 and each currently proposed transaction in which:

- we have been or will be a participant;
- the amount involved exceeded or exceeds $120,000; and
- any of our directors, executive officers, or holders of more than 5% of our capital stock, or any immediate family member of, or person sharing the household with, any of these individuals, had or will have a direct or indirect material interest.

Series D Preferred Stock Financing

Between March and May 2014, we sold an aggregate of 9,822,283 shares of our Series D preferred stock at a purchase price of $3.36 per share for an aggregate purchase price of approximately $33.0 million.

In this transaction, Mandala Capital and its affiliates purchased 8,918,750 shares of our Series D redeemable convertible preferred stock at an aggregate purchase price of $30.0 million and were issued warrants to purchase 4,459,375 shares of our common stock. Following this sale, Mandala Capital and its affiliates beneficially owned more than 5% of our outstanding capital stock. Uday Garg, a member of our board of directors, is managing director and a member of the board of directors of Mandala Capital and was designated by Mandala Capital to serve on our board of directors as their representative.

Vic C. Knauf, Ph.D., our Chief Scientific Officer, also participated in the Series D Preferred Stock Financing and purchased 3,268 shares of our Series D redeemable convertible preferred stock at an aggregate purchase price of $10,980 and was issued a warrant to purchase 1,634 shares of our common stock.

CMEA Capital and its affiliates also participated in the Series D Preferred Stock Financing and purchased 462,802 shares of our Series D redeemable convertible preferred stock at an aggregate purchase price of $1.6 million and were issued warrants to purchase 231,402 shares of our common stock. These shares were subsequently transferred from CMEA Capital via affiliated party transfer to Presidio Partners 2014, L.P. in November 2014. Peter Gajdos, a member of our board of directors, is a managing director and portfolio manager at Presidio Partners.

All purchasers of our Series D redeemable convertible preferred stock are entitled to specified registration rights. For more information regarding these registration rights, see "Description of Capital Stock—Registration Rights."

Moral Compass Corporation

In July 2012, we executed a term note in the principal amount of $8.0 million with Moral Compass Corporation, which holds more than 5% of our capital stock. Darby E. Shupp, the chairman of our board of directors, is the Chief Financial Officer of Moral Compass Corporation and has beneficial ownership of the shares held by Moral Compass Corporation. As of September 30, 2014, the principal balance outstanding under this term note was $8.0 million. We have paid $886,000 in aggregate interest under this note through September 30, 2014, with such interest accruing at an annual rate equal to prime plus two percent. In November 2014, we amended this note to change the maturity date to the first to occur of (i) April 1, 2016, (ii) the date of an event of default, or (iii) a date designated by

Moral Compass Corporation no earlier than the 20th day following our completion of an equity financing with gross proceeds to us of at least $50.0 million. In addition, the interest rate on the term loan remains at prime plus 2% through December 31, 2014, after which the rate will increase to 11% per annum until maturity.

We executed an additional term note with Moral Compass Corporation in July 2013 in the principal amount of $500,000. The principal balance of $500,000 and accrued interest of $19,000 was repaid in December 2013.

We have a license agreement with Blue Horse Labs, Inc., or BHL, an affiliate of Moral Compass Corporation. Ms. Shupp, the chairman of our board of directors, is the Treasurer of BHL. Royalty fees due to BHL were $121,000, $161,000, and $11,000 as of December 31, 2012 and 2013 and September 30, 2014, respectively.

Investors' Rights Agreements

We have entered into investors' rights agreements with certain holders of our preferred stock, including entities affiliated with Moral Compass Corporation, Mandala Capital, and Vilmorin & Cie (Limagrain), which each hold more than 5% of our capital stock and of which certain of our directors are affiliated. Pursuant to these agreements, these holders are entitled to rights with respect to the registration of their shares following this offering under the Securities Act. For a more detailed description of these registration rights, see "Description of Capital Stock—Registration Rights."

Co-Sale Agreement

In March 2014, we entered into a co-sale agreement with certain holders of our preferred stock, including entities with which certain of our directors are affiliated and entities affiliated with Mandala Capital. This co-sale agreement grants certain of our investors the right of co-sale with respect to proposed transfers of our securities by certain stockholders. Such rights will terminate upon the completion of this offering.

Voting Agreement

In March 2014, we entered into a voting agreement under which certain holders of our capital stock, including entities with which certain of our directors are affiliated and entities affiliated with Mandala Capital, have agreed to vote their shares on certain matters, including with respect to the election of directors. The voting agreement will terminate upon the completion of this offering and thereafter none of our stockholders will have any special rights regarding the election or designation of members of our board of directors or the voting of our capital stock.

Collaboration Agreements

We have several agreements with Limagrain, which held more than 5% of our capital stock prior to this offering. We have a research and development agreement with Limagrain in wheat for our NUE trait that we entered into in 2009 and a second one in wheat for our WUE trait entered into in 2011. We have received $700,000 from Limagrain under these agreements from January 1, 2011 through September 30, 2014. We further expanded our relationship with Limagrain in 2010, when they made a $25.0 million equity investment in us and we entered into a joint venture focused on the development and commercialization of improved wheat seed in North America, of which a U.S. wholly owned subsidiary of Limagrain owns 65% and we own 35%. See "Business—Key Collaborations" and Note 4 of the notes to our consolidated financial statements for additional information about these arrangements.

Other Transactions

We have granted stock options and other equity awards to our executive officers and certain of our directors. For a description of these options and equity awards, see "Executive Compensation—Outstanding Equity Awards at Fiscal Year-End" and "Management—Director Compensation."

We have not entered into arrangements with any of our executive officers that provide for severance and change in control benefits. However, in connection with the completion of this offering, we anticipate entering into an agreement with each of our named executive officers that may provide for severance or change in control protections, in which case we will disclose the terms of such agreements once finalized.

Indemnification Agreements

We expect to enter into indemnification agreements with each of our current directors, executive officers, and certain key employees upon our reincorporation as a Delaware corporation prior to the completion of this offering. The indemnification agreements and our amended and rested certificate of incorporation and amended and restated bylaws will require us to indemnify our directors and officers to the fullest extent permitted by Delaware law. See "Executive Compensation—Limitation of Liability and Indemnification of Officers and Directors."

Policies and Procedures for Related Party Transactions

Our audit committee charter will be effective upon the completion of this offering. The charter states that our audit committee is responsible for reviewing and approving in advance any related party transaction. All of our directors, officers and employees are required to report to the audit committee prior to entering into any transaction, arrangement or relationship, or any series of similar transactions, arrangements or relationships in which we are to be a participant, the amount involved exceeds $120,000, and a related person had or will have a direct or indirect material interest, including purchases of goods or services by or from the related person or entities in which the related person has a material interest, indebtedness, guarantees of indebtedness and employment by us of a related person. Prior to the creation of our audit committee, our full board of directors reviewed related party transactions, with any directors abstaining from matters in which the director had an interest.

We believe that we have executed all of the transactions set forth under the section entitled "Certain Relationships and Related Party Transactions" on terms no less favorable to us than we could have obtained from unaffiliated third parties. It is our intention to ensure that all future transactions between us and our officers, directors and principal stockholders and their affiliates are approved by the audit committee of our board of directors and are on terms no less favorable to us than those that we could obtain from unaffiliated third parties.

PRINCIPAL STOCKHOLDERS

The following table sets forth information known to us regarding the beneficial ownership of our common stock as of December 31, 2014, as adjusted to reflect the shares of common stock to be issued and sold by us in this offering, assuming no exercise of the underwriters' option to purchase additional shares, for:

- each person, or group of affiliated persons, known to us to beneficially own more than 5% of our common stock;
- each of our directors;
- each of our named executive officers; and
- all of our directors and executive officers as a group.

Beneficial ownership of shares is determined under the rules of the SEC and generally includes any shares over which a person exercises sole or shared voting or investment power. Except as indicated by footnote, and subject to applicable community property laws, we believe each person identified in the table has sole voting and investment power with respect to all shares of common stock beneficially owned by them. The information does not necessarily indicate beneficial ownership for any other purpose, including for purposes of Section 13(d) and 13(g) of the Securities Act.

Applicable percentage ownership is based on 111,628,057 shares of our common stock outstanding as of December 31, 2014, assuming the automatic conversion of all outstanding shares of our preferred stock into an aggregate of 103,362,446 shares of common stock effective upon the closing of this offering, including the conversion of each share of our existing preferred stock (other than our Series D preferred stock) into one share of common stock and the conversion of all shares of our Series D preferred stock into 9,822,283 shares of common stock (or one share of common stock for each share of Series D preferred stock issued), as if this conversion had occurred as of December 31, 2014. We have based our calculation of the percentage of beneficial ownership after this offering on shares of our common stock outstanding after the completion of this offering. Shares of our common stock subject to stock options or warrants that are currently exercisable or exercisable within 60 days of December 31, 2014 are deemed to be outstanding and to be beneficially owned by the person holding the stock option or warrant for the purpose of computing the number and percentage ownership of outstanding shares of that person. We did not deem these shares outstanding, however, for the purposes of computing the percentage ownership of any other person. Consequently, the denominator for calculating beneficial ownership percentages may be different for each beneficial owner.

Unless otherwise indicated, the address of each beneficial owner listed in the table below is c/o Arcadia Biosciences, Inc., 202 Cousteau Place, Suite 200, Davis, CA 95618.

Name of Beneficial Owner	Number of Shares Beneficially Owned	Percentage of Shares Beneficially Owned	
		Before the Offering	After the Offering
Named Executive Officers and Directors:			
Eric J. Rey(1)	5,277,083	4.5%	
Vic C. Knauf(2)	1,924,194	1.7	
Wendy S. Neal(3)	701,042	*	
Darby E. Shupp(4)	86,061,462	77.1	
Peter Gajdos	—	—	
Uday Garg(5)	13,378,125	11.5	
James R. Reis(6)	210,000	*	
Mark W. Wong(7)	200,000	*	
All directors and executive officers as a group (12 persons)(8)	110,851,074	98.6	
5% Stockholders:			
Moral Compass Corporation(4)	86,061,462	77.1	
Entity affiliated with Mandala Capital(5)	13,378,125	11.5	
Vilmorin & Cie(9)	7,375,552	6.6	

* Represents beneficial ownership of less than 1% of the outstanding shares of our common stock.

(1) Consists of 5,277,083 shares issuable pursuant to stock options exercisable within 60 days after December 31, 2014.

(2) Consists of (i) 31,250 shares of common stock issuable upon conversion of shares of Series A preferred stock, (ii) 3,268 shares of common stock issuable upon conversion of shares of Series D preferred stock, (iii) 1,634 shares issuable upon exercise of a warrant to purchase common stock, and (iv) 1,888,042 shares issuable pursuant to stock to options exercisable within 60 days after December 31, 2014.

(3) Consists of 701,042 shares issuable pursuant to stock options exercisable within 60 days after December 31, 2014.

(4) Consists of (i) an aggregate of 85,418,605 shares of common stock issuable upon conversion of Series A, Series B, and Series C preferred stock held by Moral Compass Corporation and (ii) 642,857 shares of common stock held by Moral Compass Corporation. Ms. Shupp is a member of our board of directors and is the CFO of Moral Compass Corporation. Moral Compass Corporation is owned by the John G. Sperling 2012 Irrevocable Trusts No. 1, 2, and 3, or the Sperling Trusts. Terri Bishop, Darby Shupp, and Peter Sperling together serve as trustees of the Sperling Trusts and have shared voting and investment power over the shares held by Moral Compass Corporation. The address of the beneficial owner is 4835 E. Exeter Blvd., Phoenix, AZ 85018.

(5) Consists of (i) 8,918,750 shares of common stock issuable upon conversion of Series D preferred stock held by Mandala Agribusiness Co-Investments I Limited and (ii) 4,459,375 shares subject to warrants held by Mandala Agribusiness Co-Investments I Limited. Mr. Garg is a member of our board of directors, managing director and a member of the board of directors of Mandala Capital, and a member of the board of directors of Mandala Agribusiness Fund. Mr. Garg, Dominic Redfern, Tej Gujadur, and Sheokumar Gujadur are members of the board of directors of Mandala Agribusiness Fund and exercise shared voting and investment power over the shares owned by

Mandala Agribusiness Co-Investments I Limited. The address of the beneficial owner is C/O GFin Corporate Services Ltd., 9th Floor, Orange Tower, Cybercity, Ebene, Mauritius.

(6) Consists of 210,000 shares issuable pursuant to stock options exercisable within 60 days after December 31, 2014.

(7) Consists of 200,000 shares issuable pursuant to stock options exercisable within 60 days after December 31, 2014.

(8) Consists of (i) 95,109,730 shares beneficially owned by our current directors and executive officers, (ii) 11,280,335 shares subject to options exercisable within 60 days of December 31, 2014, and (iii) 4,461,009 shares subject to a warrant.

(9) Consists of 7,375,552 shares of common stock held by Vilmorin & Cie. Emmanuel Rougier exercises sole voting and investment power over the shares owned by Vilmorin & Cie. The address of the beneficial owner is 4, quai de la Megisserie, 75001 Paris, France.

DESCRIPTION OF CAPITAL STOCK

General

The following description summarizes certain terms of our capital stock, as they are expected to be in effect upon the completion of this offering. We expect to adopt an amended and restated certificate of incorporation and amended and restated bylaws in connection with this offering, and this description summarizes the provisions that are expected to be included in such documents. Because it is only a summary, it does not contain all the information that may be important to you. For a complete description of the matters set forth in this "Description of Capital Stock," you should refer to our amended and restated certificate of incorporation and amended and restated bylaws and investors' rights agreement, which are or will be included as exhibits to the registration statement of which this prospectus forms a part, and to the applicable provisions of Delaware law.

Upon the completion of this offering, our authorized capital stock will consist of shares of common stock, $0.001 par value per share, and shares of undesignated preferred stock, $0.001 par value per share.

As of December 31, 2014, and assuming the automatic conversion of all outstanding shares of our preferred stock into common stock upon the closing of this offering, there were outstanding:

- 111,628,057 shares of our common stock held by approximately stockholders;
- options to purchase 15,039,363 shares of our common stock; and
- warrants to purchase 5,347,591 shares of our common stock.

Common Stock

Dividend Rights

Subject to preferences that may be applicable to our outstanding preferred stock, holders of common stock are entitled to receive ratably such dividends as may be declared by the board of directors out of funds legally available for that purpose. See "Dividend Policy."

Voting Rights

The holders of our common stock are entitled to one vote for each share held of record on all matters submitted to a vote of the stockholders.

No Preemptive or Similar Rights

The common stock has no preemptive or conversion rights or other subscription rights. The outstanding shares of common stock are, and the shares of common stock to be issued upon completion of this offering will be, fully paid and non-assessable.

Liquidation Rights

In the event of liquidation, dissolution or winding up of the company, the holders of common stock are entitled to share ratably in all assets remaining after payment of liabilities, subject to the prior distribution rights of any outstanding preferred stock.

Preferred Stock

After the completion of this offering, no shares of preferred stock will be outstanding.

Undesignated Preferred Stock

After the closing of this offering, the board of directors will have the authority, without further action by the stockholders, to issue up to shares of preferred stock, $0.001 par value per share, in one or more series. The board of directors will also have the authority to designate the rights, preferences, privileges and restrictions of each such series, including dividend rights, dividend rates, conversion rights, voting rights, terms of redemption, redemption prices, liquidation preferences, and the number of shares constituting any series.

The issuance of preferred stock may have the effect of delaying, deferring or preventing a change in control of the company without further action by the stockholders. The issuance of preferred stock with voting and conversion rights may also adversely affect the voting power of the holders of common stock. In certain circumstances, an issuance of preferred stock could have the effect of decreasing the market price of the common stock. As of the closing of the offering, no shares of preferred stock will be outstanding. We currently have no plans to issue any shares of preferred stock.

Options

As of December 31, 2014, we had outstanding options to purchase an aggregate of 15,039,363 shares of common stock, with a weighted-average exercise price of $0.75, pursuant to our 2006 Stock Plan.

Convertible Notes

In September 2013 and December 2013, we issued convertible notes to Mahyco for an aggregate principal amount of $5.0 million pursuant to a note and warrant purchase agreement, or 2013 Note Agreement. At any time during the five-year term of the notes, Mahyco may convert all or part of the outstanding balance of the note (including principal and accrued but unpaid interest) into our common stock at $4.13 per share. Mahyco has the right to place another $5.0 million of convertible debt with us during the five-year term. If Mahyco places such additional convertible debt with us, Mahyco may convert all or part of such additional outstanding balance of the note (including principal and accrued but unpaid interest) into our common stock at $4.13 per share if such conversion takes place within the first three years of the term. If such conversion takes place in the last two years of the term, Mahyco may convert all or part of the outstanding balance of the note (including principal and accrued but unpaid interest) into our common stock at a price per share equal to 90% of the common stock purchase price in our most recent qualifying financing.

Warrants

As of December 31, 2014, we had warrants outstanding to purchase 5,347,591 shares of common stock.

In connection with the 2013 Note Agreement described above, we issued warrants to Mahyco International Pte Ltd. to purchase 302,665 shares of our common stock at an exercise price of $4.13 per share. These warrants are expected to remain outstanding upon completion of this offering. These warrants will expire on December 11, 2018.

In connection with our Series D preferred stock financing, we issued warrants to the Series D preferred stock purchasers to purchase an aggregate of 4,911,145 shares of our common stock at an exercise price of $4.54 per share. These warrants are expected to remain outstanding upon completion of this offering. These warrants will expire on the later of the fifth anniversary of the warrants' issuance dates, which were March 28, 2014, April 8, 2014, May 5, 2014, May 12, 2014, and May 28, 2014, or the second anniversary of the completion of this offering.

In connection with our Series D preferred stock financing, we issued warrants to Piper Jaffray, a placement agent for our Series D preferred stock financing, to purchase 133,781 shares of our common stock at an exercise price of $3.36 per share. These warrants are expected to remain outstanding upon completion of this offering. These warrants will expire on the later of April 8, 2019, May 5, 2019, and May 12, 2019, respectively, or the second anniversary of the completion of this offering.

Registration Rights

Following the completion of this offering, the holders of an aggregate of shares of our common stock and certain holders of warrants exercisable for shares of our common stock, or their permitted transferees, are entitled to rights with respect to the registration of these shares under the Securities Act. These rights are provided under the terms of two investors' rights agreements between us and the holders of these shares, and include demand registration rights, short-form registration rights and piggyback registration rights.

The registration rights terminate with respect to the registration rights of an individual holder on the earliest to occur of five years following the completion of this offering or such time as all registrable securities held by such holder can be sold in any 90-day period without registration in compliance with Rule 144 of the Act.

Demand Registration Rights

At any time after 180 days from the date of this prospectus, or after one year from the date of this prospectus, the holders of a majority of the Series D preferred stock and the holders of a majority of all other series of preferred stock, respectively, may request that we effect a registration under the Securities Act covering the public offering and sale of all or part of such registrable securities held by such stockholders. Upon any such demand we must provide notice of such request to all other holders of registrable securities, and then effect the registration of such registrable securities that the initiating holders have requested to register together with all other registrable securities that any other holders of registrable securities have requested to register. Holders of registrable securities may only demand up to a maximum of two registrations per any 12-month period, and are subject to additional limitations described in the investors' rights agreements.

Piggyback Registration Rights

In connection with this offering, holders of registrable securities were entitled to, and the necessary percentage of holders waived, their rights to notice of this offering and to include their registrable securities in this offering. If we register any of our securities for public sale in another offering, including pursuant to any stockholder initiated demand registration, holders of such registrable securities will have the right to include their shares in the registration statement, subject to certain exceptions. The underwriters of any underwritten offering will have the right to limit the number registrable securities to be included in the registration statement, subject to certain restrictions.

Short Form Registration Rights

Following this offering, we may be obligated under our investors' rights agreement to effect a registration on Form S-3 under the Securities Act. At any time after we are qualified to file a registration statement on Form S-3, the holders of such registrable securities may request in writing that we effect a registration on Form S-3 if the proposed aggregate offering price of the shares to be registered by the holders requesting registration is at least $3.0 million, subject to certain exceptions.

Expenses of Registration

We are obligated to pay certain registration expenses related to any demand, company or Form S-3 registration, other than underwriting discounts, selling commissions and transfer taxes (if any), which will be borne by the holders of such registrable securities.

Anti-Takeover Effects of Provisions of the Amended and Restated Certificate of Incorporation and Amended and Restated Bylaws

Our amended and restated certificate of incorporation and our amended and restated bylaws, which will be in effect upon the completion of this offering, will contain certain provisions that could have the effect of delaying, deterring or preventing another party from acquiring control of us. These provisions and certain provisions of Delaware law, which are summarized below, are expected to discourage coercive takeover practices and inadequate takeover bids. These provisions are also designed, in part, to encourage persons seeking to acquire control of us to negotiate first with our board of directors. We believe that the benefits of increased protection of our potential ability to negotiate more favorable terms with an unfriendly or unsolicited acquirer outweigh the disadvantages of discouraging a proposal to acquire us.

Undesignated Preferred Stock

As discussed above, our board of directors will have the ability to issue preferred stock with voting or other rights or preferences that could impede the success of any attempt to change control of us. These and other provisions may have the effect of deterring hostile takeovers or delaying changes in control or management of our company.

Limits on Ability of Stockholders to Act by Written Consent or Call a Special Meeting

Our amended and restated certificate of incorporation will provide that our stockholders may not act by written consent, which may lengthen the amount of time required to take stockholder actions. As a result, a holder controlling a majority of our capital stock would not be able to amend our bylaws or remove directors without holding a meeting of our stockholders called in accordance with our bylaws.

In addition, our amended and restated bylaws will provide that special meetings of the stockholders may be called only by the chairperson of the board, the Chief Executive Officer or our board of directors. Stockholders may not call a special meeting, which may delay the ability of our stockholders to force consideration of a proposal or for holders controlling a majority of our capital stock to take any action, including the removal of directors.

Requirements for Advance Notification of Stockholder Nominations and Proposals

Our amended and restated bylaws will establish advance notice procedures with respect to stockholder proposals and the nomination of candidates for election as directors, other than nominations made by or at the direction of our board of directors or a committee of our board of directors. These provisions may have the effect of precluding the conduct of certain business at a meeting if the proper procedures are not followed. These provisions may also discourage or deter a potential acquirer from conducting a solicitation of proxies to elect the acquirer's own slate of directors or otherwise attempting to obtain control of our company.

Board Classification

Upon the closing of the offering, our board of directors will be divided into three classes, one class of which is elected each year by our stockholders. The directors in each class will serve three-year terms. For more information on the classified board, see "Management—Board of Directors." A third

party may be discouraged from making a tender offer or otherwise attempting to obtain control of us as it is more difficult and time consuming for stockholders to replace a majority of the directors on a classified board.

No Cumulative Voting

Our amended and restated certificate of incorporation and amended and restated bylaws will not permit cumulative voting in the election of directors. Cumulative voting allows a stockholder to vote a portion or all of its shares for one or more candidates for seats on the board of directors. Without cumulative voting, a minority stockholder may not be able to gain as many seats on our board of directors as the stockholder would be able to gain if cumulative voting were permitted. The absence of cumulative voting makes it more difficult for a minority stockholder to gain a seat on our board of directors to influence our board's decision regarding a takeover.

Amendment of Charter and Bylaws Provisions

The amendment of the above provisions of our amended and restated certificate of incorporation will require approval by holders of at least two thirds of our outstanding capital stock entitled to vote generally in the election of directors. The amendment of our bylaws will require approval by the holders of at least two-thirds of our outstanding capital stock entitled to vote generally in the election of directors.

Delaware Anti-Takeover Statute

We will be subject to the provisions of Section 203 of the DGCL regulating corporate takeovers upon our reincorporation as a Delaware corporation prior to the completion of this offering. In general, Section 203 prohibits a publicly held Delaware corporation from engaging, under certain circumstances, in a business combination with an interested stockholder for a period of three years following the date the person became an interested stockholder unless:

- prior to the date of the transaction, our board of directors approved either the business combination or the transaction which resulted in the stockholder becoming an interested stockholder;
- upon completion of the transaction that resulted in the stockholder becoming an interested stockholder, the interested stockholder owned at least 85% of the voting stock of the corporation outstanding at the time the transaction commenced, calculated as provided under Section 203; or
- at or subsequent to the date of the transaction, the business combination is approved by our board of directors and authorized at an annual or special meeting of stockholders, and not by written consent, by the affirmative vote of at least two-thirds of the outstanding voting stock which is not owned by the interested stockholder.

Generally, a business combination includes a merger, asset or stock sale, or other transaction resulting in a financial benefit to the interested stockholder. An interested stockholder is a person who, together with affiliates and associates, owns or, within three years prior to the determination of interested stockholder status, did own 15% or more of a corporation's outstanding voting stock. We expect the existence of this provision to have an anti-takeover effect with respect to transactions our board of directors does not approve in advance. We anticipate that Section 203 may also discourage attempts that might result in a premium over the market price for the shares of common stock held by stockholders.

The provisions of Delaware law and the provisions of our amended and restated certificate of incorporation and amended and restated bylaws, as amended upon the completion of this offering,

could have the effect of discouraging others from attempting hostile takeovers and, as a consequence, they might also inhibit temporary fluctuations in the market price of our common stock that often result from actual or rumored hostile takeover attempts. These provisions might also have the effect of preventing changes in our management. It is possible that these provisions could make it more difficult to accomplish transactions that stockholders might otherwise deem to be in their best interests.

Transfer Agent and Registrar

Upon the completion of this offering, the transfer agent and registrar for our common stock will be American Stock Transfer & Trust Company, LLC. The transfer agent and registrar's address is 6201 15th Avenue, Brooklyn, NY 11219.

Listing

We have applied to have our common stock listed on The NASDAQ Global Market under the trading symbol "RKDA."

SHARES ELIGIBLE FOR FUTURE SALE

Prior to this offering, there has not been a public market for shares of our common stock. Future sales of substantial amounts of shares of our common stock, including shares issued upon the exercise or settlement of outstanding options and warrants, in the public market after this offering, or the possibility of these sales occurring, could cause the prevailing market price for our common stock to fall or impair our ability to raise equity capital in the future. As described below, only a limited number of shares of our common stock will be available for sale shortly after this offering due to contractual and legal restrictions on resale. Nevertheless, sales of our common stock in the public market after such restrictions lapse, or the perception that those sales may occur, could adversely affect the prevailing market price at such time and our ability to raise equity capital in the future.

Upon the completion of this offering, based on the number of shares of our capital stock outstanding as of December 31, 2014, and assuming no exercise or settlement of outstanding options or warrants, we will have outstanding an aggregate of approximately shares of common stock. Of these outstanding shares, all shares of common stock to be sold in this offering, plus up to an additional shares if the underwriters exercise in full their option to purchase additional shares, will be freely tradable in the public market without restriction or further registration under the Securities Act, except for any shares that are held by any of our "affiliates," as that term is defined in Rule 144 of the Securities Act.

The remaining shares of our common stock outstanding after this offering are "restricted securities," as such term is defined in Rule 144 under the Securities Act. These were issued and sold by us in private transactions and are eligible for public sale only if registered under the Securities Act or sold in accordance with Rule 144 or Rule 701 under the Securities Act, each of which is discussed below. Holders of substantially all of our equity securities have entered into lock-up agreements with the underwriters under which they have agreed, subject to specific exceptions, not to sell any of our stock for a period of time following the date of this prospectus, as described below. As a result of these agreements, subject to the provisions of Rule 144 or Rule 701, shares will be available for sale in the public market as follows:

- beginning on the date of this prospectus, all shares of our common stock sold in this offering will be immediately available for sale in the public market; and

- beginning 181 days after the date of this prospectus, the remainder of the shares of our common stock will be eligible for sale in the public market from time to time thereafter, subject in some cases to the volume and other restrictions of Rule 144, as described below.

Lock-up Agreements and Market Stand-Off Agreements

We, all of our directors, officers and substantially all of our securityholders have entered into lock-up agreements that generally provide that these holders will not offer, pledge, sell, agree to sell, directly or indirectly, or otherwise dispose of any shares of common stock or any securities convertible into or exchangeable for shares of common stock without the prior written consent of Credit Suisse Securities (USA) LLC and J.P. Morgan Securities LLC for a period of 180 days from the date of this prospectus, subject to certain exceptions. Credit Suisse Securities (USA) LLC and J.P. Morgan Securities LLC may, in their discretion, release any of the securities subject to these lock-up agreements at any time.

In addition to the restrictions contained in the lock-up agreements described above, we have entered into agreements with stockholders, including our investors' rights agreements and our standard form of stock option agreement, that contain certain market stand-off provisions imposing restrictions on the ability of such stockholders to offer, sell, or transfer our equity securities for a period of 180 days following the date of this prospectus.

Rule 144

In general, under Rule 144 as currently in effect, once we have been subject to public company reporting requirements for at least 90 days, a person who is not deemed to have been one of our affiliates for purposes of the Securities Act at any time during the 90 days preceding a sale and who has beneficially owned the shares proposed to be sold for at least six months, including the holding period of any prior owner other than our affiliates, is entitled to sell such shares without complying with the manner of sale, volume limitation or notice provisions of Rule 144, subject to compliance with the public information requirements of Rule 144. If such a person has beneficially owned the shares proposed to be sold for at least one year, including the holding period of any prior owner other than our affiliates, then such person is entitled to sell such shares without complying with any of the requirements of Rule 144.

In general, under Rule 144, as currently in effect, our affiliates or persons selling shares on behalf of our affiliates are entitled to sell upon expiration of the lock-up agreements described above, within any three-month period beginning 90 days after the date of this prospectus, a number of shares that does not exceed the greater of:

- 1% of the number of shares of common stock then outstanding, which will equal approximately shares immediately after this offering; or
- the average weekly trading volume of the common stock during the four calendar weeks preceding the filing of a notice on Form 144 with respect to such sale.

Sales under Rule 144 by our affiliates or persons selling shares on behalf of our affiliates are also subject to certain manner of sale provisions and notice requirements and to the availability of current public information about us.

Rule 701

Rule 701 generally allows a stockholder who purchased shares of our common stock pursuant to a written compensatory plan or contract and who is not deemed to have been an affiliate of our company during the immediately preceding 90 days to sell these shares in reliance upon Rule 144, but without being required to comply with the public information, holding period, volume limitation, or notice provisions of Rule 144. Rule 701 also permits affiliates of our company to sell their Rule 701 shares under Rule 144 without complying with the holding period requirements of Rule 144. All holders of Rule 701 shares, however, are required to wait until 90 days after the date of this prospectus before selling such shares pursuant to Rule 701.

Registration Rights

When this offering is complete, the holders of an aggregate of shares of our common stock, or their transferees, will be entitled to rights with respect to the registration of their shares under the Securities Act. Registration of these shares under the Securities Act would result in these shares becoming freely tradable without restriction under the Securities Act immediately upon the effectiveness of such registration. For a further description of these rights, see "Description of Capital Stock—Registration Rights."

Registration Statement on Form S-8

We intend to file registration statements on Form S-8 under the Securities Act promptly after the completion of this offering to register all of the shares of our common stock issued or reserved for issuance under our 2006 Stock Plan, our 2015 Plan and our ESPP. The registration statements on Form S-8 are expected to become effective immediately upon filing, and shares of our common stock covered by these registration statements will be eligible for sale in the public market, subject to the Rule 144 limitations applicable to affiliates, vesting restrictions and any applicable lock-up agreements and market standoff agreements. For a description of our equity compensation plans, see "Executive Compensation—Employee Benefit and Stock Plans."

MATERIAL U.S. FEDERAL TAX CONSEQUENCES TO NON-U.S. HOLDERS

This section summarizes certain material U.S. federal income tax considerations relating to the ownership and disposition of our common stock sold pursuant to this offering to a "non-U.S. holder" (as defined below). This summary does not provide a complete analysis of all potential tax considerations. The information provided below is based upon provisions of the Code, Treasury regulations promulgated thereunder, administrative rulings and judicial decisions currently in effect. These authorities may change at any time, possibly on a retroactive basis, or the IRS might interpret the existing authorities differently. In either case, the U.S. federal income tax considerations of owning or disposing of our common stock could differ from those described below. As a result, we cannot assure you that the U.S. federal income tax considerations described in this discussion will not be challenged by the IRS or will be sustained by a court if challenged by the IRS.

This summary does not address the tax considerations arising under the alternative minimum tax, the net investment income tax, the laws of any state, local or non-U.S. jurisdiction, or under U.S. federal gift and estate tax laws. In addition, this discussion does not address tax considerations applicable to an investor's particular circumstances or to investors that may be subject to special tax rules, including, without limitation:

- banks, insurance companies, or other financial institutions;
- partnerships or entities or arrangements treated as partnerships or other pass-through entities for U.S. federal income tax purposes (or investors in such entities);
- corporations that accumulate earnings to avoid U.S. federal income tax;
- tax-exempt or governmental organizations or tax-qualified retirement plans;
- real estate investment trusts or regulated investment companies;
- controlled foreign corporations or passive foreign investment companies;
- persons who acquired our common stock pursuant to the exercise of an employee stock option or otherwise as compensation for services;
- dealers in securities or currencies;
- traders in securities that elect to use a mark-to-market method of accounting for their securities holdings;
- persons that own, or are deemed to own, more than 5% of our capital stock (except to the extent specifically set forth below);
- certain former citizens or long-term residents of the United States;
- persons who hold our common stock as a position in a hedging transaction, "straddle," "conversion transaction" or other risk reduction transaction;
- persons who do not hold our common stock as a capital asset within the meaning of Section 1221 of the Code (generally, for investment purposes); or
- persons deemed to sell our common stock under the constructive sale provisions of the Code.

In addition, if a partnership or entity classified as a partnership for U.S. federal income tax purposes is a beneficial owner of our common stock, the tax treatment of a partner in the partnership or an owner of the entity will depend upon the status of the partner or other owner and the activities of the partnership or other entity. Accordingly, this summary does not address U.S. federal income tax considerations applicable to partnerships that hold our common stock, and partners in such partnerships should consult their tax advisors.

INVESTORS CONSIDERING THE PURCHASE OF OUR COMMON STOCK SHOULD CONSULT THEIR OWN TAX ADVISORS REGARDING THE APPLICATION OF THE U.S. FEDERAL INCOME, GIFT AND ESTATE TAX LAWS TO THEIR PARTICULAR SITUATIONS AND THE CONSEQUENCES OF FOREIGN, STATE OR LOCAL LAWS, AND TAX TREATIES.

Non-U.S. Holder Defined

For purposes of this summary, a "non-U.S. holder" is any holder of our common stock, other than an entity taxable as a partnership for U.S. federal income tax purposes that is not:

- an individual who is a citizen or resident of the United States;
- a corporation, or other entity taxable as a corporation for U.S. federal income tax purposes, created or organized under the laws of the United States, any state therein or the District of Columbia or otherwise treated as such for U.S. federal income tax purposes;
- a trust that (1) is subject to the primary supervision of a U.S. court and one or more U.S. persons have authority to control all substantial decisions of the trust or (2) has a valid election in effect under applicable Treasury regulations to be treated as a U.S. person; or
- an estate whose income is subject to U.S. federal income tax regardless of source.

If you are a non-U.S. citizen who is an individual, you may, in many cases, be deemed to be a resident alien, as opposed to a nonresident alien, by virtue of being present in the United States for at least 31 days in the calendar year and for an aggregate of at least 183 days during a three-year period ending in the current calendar year. For these purposes, all the days present in the current year, one-third of the days present in the immediately preceding year, and one-sixth of the days present in the second preceding year are counted. Resident aliens are subject to U.S. federal income tax as if they were U.S. citizens. Such an individual is urged to consult his or her own tax advisor regarding the U.S. federal income tax consequences of the ownership, sale, exchange or other disposition of our common stock.

Distributions

We do not expect to declare or make any distributions on our common stock in the foreseeable future. If we do make any distributions on shares of our common stock, however, such distributions will constitute dividends for U.S. federal income tax purposes to the extent paid from our current or accumulated earnings and profits, as determined under U.S. federal income tax principles. Distributions in excess of our current and accumulated earnings and profits will constitute a return of capital that is applied against and reduces, but not below zero, a non-U.S. holder's adjusted tax basis in shares of our common stock. Any remaining excess will be treated as gain realized on the sale or other disposition of our common stock. See "—Sale of Common Stock."

Subject to the discussion below regarding the Foreign Account Tax Compliance Act, or FATCA, and backup withholding, any distribution made to a non-U.S. holder on our common stock that is not effectively connected with a non-U.S. holder's conduct of a trade or business in the United States will generally be subject to U.S. withholding tax at a 30% rate. The withholding tax might not apply, however, or might apply at a reduced rate, under the terms of an applicable income tax treaty between the United States and the non-U.S. holder's country of residence. You should consult your tax advisors regarding your entitlement to benefits under a relevant income tax treaty. Generally, in order for us or our paying agent to withhold tax at a lower treaty rate, a non-U.S. holder must certify its entitlement to treaty benefits. A non-U.S. holder generally can meet this certification requirement by providing an IRS Form W-8BEN, W-8BEN-E, any successor form to the IRS Form W-8BEN or W-8BEN-E, or appropriate substitute form to us or our paying agent. If the non-U.S. holder holds the stock through a financial institution or other agent acting on the holder's behalf, the holder will be required to provide appropriate documentation to the agent. The holder's agent will then be required to provide

certification to us or our paying agent, either directly or through other intermediaries. If you are eligible for a reduced rate of U.S. federal withholding tax under an income tax treaty, you may obtain a refund or credit from the IRS of any excess amounts withheld by filing an appropriate claim for a refund with the IRS in a timely manner.

Distributions received by a non-U.S. holder that are effectively connected with a U.S. trade or business conducted by the non-U.S. holder, and, if required by an applicable income tax treaty between the United States and the non-U.S. holder's country of residence, are attributable to a permanent establishment maintained by the non-U.S. holder in the United States, are not subject to such withholding tax. To obtain this exemption, a non-U.S. holder must provide us with an IRS Form W-8ECI properly certifying such exemption. Such effectively connected distributions, although not subject to U.S. withholding tax, are generally taxed at the same graduated rates applicable to U.S. persons, net of certain deductions and credits. In addition to the graduated tax described above, distributions received by corporate non-U.S. holders that are effectively connected with a U.S. trade or business of the corporate non-U.S. holder may also be subject to a branch profits tax equal to 30% of its effectively connected earnings and profits for the taxable year, as adjusted for certain items, although an applicable income tax treaty between the United States and the non-U.S. holder's country of residence might provide for a lower rate.

Sale of Common Stock

Subject to the discussion below regarding FATCA and backup withholding, non-U.S. holders will generally not be subject to U.S. federal income tax on any gains realized on the sale, exchange or other disposition of common stock unless:

- the gain (1) is effectively connected with the conduct by the non-U.S. holder of a U.S. trade or business and (2) if required by an applicable income tax treaty between the United States and the non-U.S. holder's country of residence, is attributable to a permanent establishment (or, in the case of an individual, a fixed base) maintained by the non-U.S. holder in the United States (in which case the special rules described below apply);

- the non-U.S. holder is an individual who is present in the United States for 183 days or more in the taxable year of the sale, exchange or other disposition of our common stock, and certain other requirements are met (in which case the gain would be subject to a flat 30% tax, or such reduced rate as may be specified by an applicable income tax treaty, which may be offset by U.S.-source capital losses, even though the individual is not considered a resident of the United States); or

- the rules of the Foreign Investment in Real Property Tax Act, or FIRPTA, treat the gain as effectively connected with a U.S. trade or business.

The FIRPTA rules may apply to a sale, exchange or other disposition of our common stock if we are at the time of the disposition, or were within the shorter of the five-year period preceding the disposition and the non-U.S. holder's holding period, a "U.S. real property holding corporation," or USRPHC. In general, we would be a USRPHC if interests in U.S. real property comprised at least half of the value of our business assets. If we are or become a USRPHC, as long as our common stock is regularly traded on an established securities market, such common stock will be treated as U.S. real property interests subject to the FIRPTA rules only if a non-U.S. holder actually owns or constructively holds more than 5% of our outstanding common stock.

If any gain from the sale, exchange or other disposition of common stock, (1) is effectively connected with a U.S. trade or business conducted by a non-U.S. holder and (2) if required by an applicable income tax treaty between the United States and the non-U.S. holder's country of residence, is attributable to a permanent establishment (or, in the case of an individual, a fixed base) maintained by such non-U.S. holder in the United States, then the gain generally will be subject to U.S. federal

income tax at the same graduated rates applicable to U.S. persons, net of certain deductions and credits. If the non-U.S. holder is a corporation, under certain circumstances, that portion of its earnings and profits that is effectively connected with its U.S. trade or business, subject to certain adjustments, generally would be subject to a "branch profits tax." The branch profits tax rate is equal to 30% of its effectively connected earnings and profits for the taxable year, as adjusted for certain items, although an applicable income tax treaty between the United States and the non-U.S. holder's country of residence might provide for a lower rate.

Backup Withholding and Information Reporting

The Code and the Treasury regulations require those who make specified payments to report the payments to the IRS. Among the specified payments are dividends and proceeds paid by brokers to their customers. The required information returns enable the IRS to determine whether the recipient properly included the payments in income. This reporting regime is reinforced by "backup withholding" rules. These rules require the payors to withhold tax from payments subject to information reporting if the recipient fails to cooperate with the reporting regime by failing to provide his taxpayer identification number to the payor, furnishing an incorrect identification number, failing to report interest or dividends on his U.S. tax returns, or failing to otherwise establish an exemption to these rules. The backup withholding rate is currently 28%. The backup withholding rules do not apply to payments to corporations, whether domestic or foreign, provided that they establish such exemption.

Payments to non-U.S. holders of dividends on common stock generally will not be subject to backup withholding, and payments of proceeds made to non-U.S. holders by a broker upon a sale of common stock will not be subject to information reporting or backup withholding, in each case so long as the non-U.S. holder certifies its nonresident status (and we or our paying agent do not have actual knowledge or reason to know the holder is a U.S. person or that the conditions of any other exemption are not, in fact, satisfied) or otherwise establishes an exemption. The certification procedures to claim treaty benefits described under "Distributions" above will generally satisfy the certification requirements necessary to avoid the backup withholding tax. We must report annually to the IRS any dividends paid to each non-U.S. holder and the tax withheld, if any, with respect to these dividends. Copies of these reports may be made available to tax authorities in the country where the non-U.S. holder resides.

Backup withholding is not an additional tax. Any amounts withheld from a payment to a holder of common stock under the backup withholding rules can be credited against any U.S. federal income tax liability of the holder and may entitle the holder to a refund from the IRS, provided that the required information is furnished to the IRS in a timely manner.

Foreign Account Tax Compliance Act (FATCA)

FATCA imposes U.S. federal withholding tax of 30% on certain types of U.S. source "withholdable payments" (including dividends and the gross proceeds from the sale or other disposition of U.S. stock) to foreign financial institutions, which are broadly defined for this purpose, and other non-U.S. entities that fail to comply with certain certification and information reporting requirements regarding U.S. account holders or owners of such institutions or entities. The obligation to withhold under FATCA applies to any dividends on our common stock and is currently expected to apply to gross proceeds from the disposition of our common stock paid after December 31, 2016. An intergovernmental agreement between the United States and an applicable foreign country may modify the requirements described in this paragraph. Non-U.S. holders should consult their own tax advisors regarding the possible implications of FATCA on their investment in our common stock.

THE PRECEDING DISCUSSION OF U.S. FEDERAL INCOME TAX CONSIDERATIONS IS FOR GENERAL INFORMATION ONLY. IT IS NOT TAX ADVICE. EACH PROSPECTIVE INVESTOR SHOULD CONSULT ITS OWN TAX ADVISOR REGARDING THE PARTICULAR U.S. FEDERAL, STATE, LOCAL AND NON-U.S. TAX CONSEQUENCES OF PURCHASING, HOLDING AND DISPOSING OF OUR COMMON STOCK, INCLUDING THE CONSEQUENCES OF ANY PROPOSED CHANGE IN APPLICABLE LAWS.

UNDERWRITING

Under the terms and subject to the conditions contained in an underwriting agreement dated , we have agreed to sell to the underwriters named below, for whom Credit Suisse Securities (USA) LLC and J.P. Morgan Securities LLC are acting as representatives, the following respective numbers of shares of common stock:

Underwriter	Number of Shares
Credit Suisse Securities (USA) LLC	
J.P. Morgan Securities LLC	
Piper Jaffray & Co.	
Total	

The underwriting agreement provides that the underwriters are obligated to purchase all the shares of common stock in the offering if any are purchased, other than those shares covered by the option to purchase additional shares described below. The underwriting agreement also provides that if an underwriter defaults, the purchase commitments of non-defaulting underwriters may be increased or the offering may be terminated.

We have granted to the underwriters a 30-day option to purchase on a pro rata basis up to additional shares at the initial public offering price less the underwriting discounts and commissions.

The underwriters propose to offer the shares of common stock initially at the public offering price on the cover page of this prospectus and to selling group members at that price less a selling concession of $ per share. After the initial public offering the underwriters may change the public offering price and selling concession to broker-dealers.

The following table summarizes the compensation we will pay:

	Per Share		Total	
	Without Option to Purchase Additional Shares	With Option to Purchase Additional Shares	Without Option to Purchase Additional Shares	With Option to Purchase Additional Shares
Underwriting discounts and commissions paid by us	$	$	$	$

We estimate that our total expenses for this offering, excluding the underwriting discounts and commissions, will be approximately $. We have also agreed to reimburse the underwriters for certain FINRA-related expenses incurred by them in connection with this offering in an amount up to $.

The underwriters have informed us that they do not expect sales to accounts over which the underwriters have discretionary authority to exceed 5% of the shares of common stock being offered.

We have agreed that we will not offer, sell, contract to sell, pledge or otherwise dispose of, directly or indirectly, or file with the Securities and Exchange Commission a registration statement under the Securities Act relating to, any shares of our common stock or securities convertible into or exchangeable or exercisable for any shares of our common stock, or publicly disclose the intention to make any offer, sale, pledge, disposition or filing, without the prior written consent of Credit Suisse Securities (USA) LLC and J.P. Morgan Securities LLC for a period of 180 days after the date of this prospectus, except issuances pursuant to the exercise of employee stock options outstanding on the date hereof.

Our officers, directors and substantially all of our existing securityholders have agreed that they will not offer, sell, contract to sell, pledge or otherwise dispose of, directly or indirectly, any shares of our common stock or securities convertible into or exchangeable or exercisable for any shares of our common stock, enter into a transaction that would have the same effect, or enter into any swap, hedge or other arrangement that transfers, in whole or in part, any of the economic consequences of ownership of our common stock, whether any of these transactions are to be settled by delivery of our common stock or other securities, in cash or otherwise, or publicly disclose the intention to make any offer, sale, pledge or disposition, or to enter into any transaction, swap, hedge or other arrangement, without, in each case, the prior written consent of Credit Suisse Securities (USA) LLC and J.P. Morgan Securities LLC for a period of 180 days after the date of this prospectus, subject to limited exceptions.

We have agreed to indemnify the underwriters against liabilities under the Securities Act, or contribute to payments that the underwriters may be required to make in that respect.

We have applied to list the shares of common stock on The NASDAQ Global Market under the symbol "RKDA."

Prior to this offering, there has been no public market for our common stock. The initial public offering price will be determined by negotiations between us and the representatives of the underwriters. In determining the initial public offering price, we and the representatives of the underwriters expect to consider a number of factors including:

- the information set forth in this prospectus and otherwise available to the representatives;
- our prospects and the history and prospects for the industry in which we compete;
- an assessment of our management;
- our prospects for future earnings;
- the general condition of the securities markets at the time of this offering;
- the recent market prices of, and demand for, publicly traded common stock of generally comparable companies; and
- other factors deemed relevant by the underwriters and us.

Neither we nor the underwriters can assure investors that an active trading market will develop for our common shares, or that the shares will trade in the public market at or above the initial public offering price.

In connection with the offering the underwriters may engage in stabilizing transactions, over-allotment transactions, syndicate covering transactions, penalty bids and passive market making in accordance with Regulation M under the Exchange Act.

- Stabilizing transactions permit bids to purchase the underlying security so long as the stabilizing bids do not exceed a specified maximum.
- Over-allotment involves sales by the underwriters of shares in excess of the number of shares the underwriters are obligated to purchase, which creates a syndicate short position. The short position may be either a covered short position or a naked short position. In a covered short position, the number of shares over-allotted by the underwriters is not greater than the number of additional shares that they have the option to purchase. In a naked short position, the number of shares involved is greater than the number of additional shares that they have the option to purchase. The underwriters may close out any covered short position by either exercising their option to purchase additional shares and/or purchasing shares in the open market.
- Syndicate covering transactions involve purchases of the common stock in the open market after the distribution has been completed in order to cover syndicate short positions. In determining

the source of shares to close out the short position, the underwriters will consider, among other things, the price of shares available for purchase in the open market as compared to the price at which they may purchase additional shares through their option. If the underwriters sell more shares than could be covered by the option to purchase additional shares, a naked short position, the position can only be closed out by buying shares in the open market. A naked short position is more likely to be created if the underwriters are concerned that there could be downward pressure on the price of the shares in the open market after pricing that could adversely affect investors who purchase in the offering.

- Penalty bids permit the representatives to reclaim a selling concession from a syndicate member when the common stock originally sold by the syndicate member is purchased in a stabilizing or syndicate covering transaction to cover syndicate short positions.

- In passive market making, market makers in the common stock who are underwriters or prospective underwriters may, subject to limitations, make bids for or purchases of our common stock until the time, if any, at which a stabilizing bid is made.

These stabilizing transactions, syndicate covering transactions and penalty bids may have the effect of raising or maintaining the market price of our common stock or preventing or retarding a decline in the market price of the common stock. As a result the price of our common stock may be higher than the price that might otherwise exist in the open market. These transactions may be effected on the or otherwise and, if commenced, may be discontinued at any time.

A prospectus in electronic format may be made available on the web sites maintained by one or more of the underwriters, or selling group members, if any, participating in this offering and one or more of the underwriters participating in this offering may distribute prospectuses electronically. The representatives may agree to allocate a number of shares to underwriters and selling group members for sale to their online brokerage account holders. Internet distributions will be allocated by the underwriters and selling group members that will make internet distributions on the same basis as other allocations.

Certain of the underwriters and their affiliates have provided in the past to us and our affiliates and may provide from time to time in the future certain commercial banking, financial advisory, investment banking and other services for us and such affiliates in the ordinary course of their business, for which they have received and may continue to receive customary fees and commissions. In addition, from time to time, certain of the underwriters and their affiliates may effect transactions for their own account or the account of customers, and hold on behalf of themselves or their customers, long or short positions in our debt or equity securities or loans, and may do so in the future.

Piper Jaffray & Co. acted as placement agent in connection with our Series D preferred stock financing, under which we sold shares between March and May 2014, and received as compensation a cash fee of $2.0 million and warrants to purchase 133,781 shares of our common stock at an exercise price of $3.36 per share, expiring on April 8, 2019, May 5, 2019, and May 12, 2019, respectively.

Selling Restrictions

General

Other than in the United States, no action has been taken by us or the underwriters that would permit a public offering of the securities offered by this prospectus in any jurisdiction where action for that purpose is required. The securities offered by this prospectus may not be offered or sold, directly or indirectly, nor may this prospectus or any other offering material or advertisements in connection with the offer and sale of any such securities be distributed or published in any jurisdiction, except under circumstances that will result in compliance with the applicable rules and regulations of that jurisdiction. Persons into whose possession this prospectus comes are advised to inform themselves about and to observe any restrictions relating to the offering and the distribution of this prospectus.

This prospectus does not constitute an offer to sell or a solicitation of an offer to buy any securities offered by this prospectus in any jurisdiction in which such an offer or a solicitation is unlawful.

United Kingdom

This document is only being distributed to and is only directed at (i) persons who are outside the United Kingdom or (ii) to investment professionals falling within Article 19(5) of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005 (the "Order") or (iii) high net worth entities, and other persons to whom it may lawfully be communicated, falling within Article 49(2)(a) to (d) of the Order (all such persons together being referred to as "relevant persons"). The securities are only available to, and any invitation, offer or agreement to subscribe, purchase or otherwise acquire such securities will be engaged in only with, relevant persons. Any person who is not a relevant person should not act or rely on this document or any of its contents.

European Economic Area

In relation to each Member State of the European Economic Area which has implemented the Prospectus Directive (each, a "Relevant Member State"), from and including the date on which the European Union Prospectus Directive (the "EU Prospectus Directive") was implemented in that Relevant Member State (the "Relevant Implementation Date") an offer of securities described in this prospectus may not be made to the public in that Relevant Member State prior to the publication of a prospectus in relation to the shares which has been approved by the competent authority in that Relevant Member State or, where appropriate, approved in another Relevant Member State and notified to the competent authority in that Relevant Member State, all in accordance with the EU Prospectus Directive, except that, with effect from and including the Relevant Implementation Date, an offer of securities described in this prospectus may be made to the public in that Relevant Member State at any time:

- to any legal entity which is a qualified investor as defined under the EU Prospectus Directive;
- to fewer than 100 or, if the Relevant Member State has implemented the relevant provision of the 2010 PD Amending Directive, 150 natural or legal persons (other than qualified investors as defined in the EU Prospectus Directive); or
- in any other circumstances falling within Article 3(2) of the EU Prospectus Directive, provided that no such offer of securities described in this prospectus shall result in a requirement for the publication by us of a prospectus pursuant to Article 3 of the EU Prospectus Directive.

For the purposes of this provision, the expression an "offer of securities to the public" in relation to any securities in any Relevant Member State means the communication in any form and by any means of sufficient information on the terms of the offer and the securities to be offered so as to enable an investor to decide to purchase or subscribe for the securities, as the same may be varied in that Member State by any measure implementing the EU Prospectus Directive in that Member State. The expression "EU Prospectus Directive" means Directive 2003/71/EC (and any amendments thereto, including the 2010 PD Amending Directive, to the extent implemented in the Relevant Member State) and includes any relevant implementing measure in each Relevant Member State, and the expression "2010 PD Amending Directive" means Directive 2010/73/EU.

Hong Kong

The shares may not be offered or sold by means of any document other than (i) in circumstances that do not constitute an offer to the public within the meaning of the Companies Ordinance (Cap.32, Laws of Hong Kong), or (ii) to "professional investors" within the meaning of the Securities and Futures Ordinance (Cap.571, Laws of Hong Kong) and any rules made thereunder, or (iii) in other circumstances that do not result in the document being a "prospectus" within the meaning of the

Companies Ordinance (Cap.32, Laws of Hong Kong), and no advertisement, invitation or document relating to the shares may be issued or may be in the possession of any person for the purpose of issue (in each case whether in Hong Kong or elsewhere), that is directed at, or the contents of which are likely to be accessed or read by, the public in Hong Kong (except if permitted under the laws of Hong Kong) other than with respect to shares that are or are intended to be disposed of only to persons outside Hong Kong or only to "professional investors" within the meaning of the Securities and Futures Ordinance (Cap.571, Laws of Hong Kong) and any rules made thereunder.

Singapore

This prospectus has not been registered as a prospectus with the Monetary Authority of Singapore. Accordingly, this prospectus and any other document or material in connection with the offer or sale, or invitation for subscription or purchase, of the shares may not be circulated or distributed, nor may the shares be offered or sold, or be made the subject of an invitation for subscription or purchase, whether directly or indirectly, to persons in Singapore other than (i) to an institutional investor under Section 274 of the Securities and Futures Act, Chapter 289 of Singapore, or the SFA, (ii) to a relevant person, or any person pursuant to Section 275(1A), and in accordance with the conditions, specified in Section 275 of the SFA or (iii) otherwise pursuant to, and in accordance with the conditions of, any other applicable provision of the SFA.

Where the shares are subscribed or purchased under Section 275 by a relevant person that is: (a) a corporation (which is not an accredited investor) the sole business of which is to hold investments and the entire share capital of which is owned by one or more individuals, each of whom is an accredited investor; or (b) a trust (where the trustee is not an accredited investor) whose sole purpose is to hold investments and where each beneficiary of which is an accredited investor, shares, debentures and units of shares and debentures of that corporation or the beneficiaries' rights and interest in that corporation or trust shall not be transferable for six months after that corporation or that trust has acquired the shares under Section 275 except: (1) to an institutional investor under Section 274 of the SFA or to a relevant person, or any person pursuant to Section 275(1A), and in accordance with the conditions, specified in Section 275 of the SFA; (2) where no consideration is given for the transfer; or (3) by operation of law.

Switzerland

This document, as well as any other material relating to the shares of our common stock, which are the subject of the offering contemplated by this prospectus, does not constitute an issue prospectus pursuant to Article 652a of the Swiss Code of Obligations. The shares will not be listed on the SIX Swiss Exchange and, therefore, the documents relating to the shares, including, but not limited to, this document, do not claim to comply with the disclosure standards of the listing rules of the SIX Swiss Exchange and corresponding prospectus schemes annexed to the listing rules of the SIX Swiss Exchange.

The shares are being offered in Switzerland by way of a private placement, i.e., to a small number of selected investors only, without any public offer and only to investors who do not purchase the shares with the intention to distribute them to the public. The investors will be individually approached by us from time to time.

Notice to Residents of Canada

The distribution of the shares in Canada is being made only in the provinces of Ontario and Quebec on a private placement basis such that the shares may be sold only to purchasers resident in those provinces purchasing as principal that are both "accredited investors" as defined in National Instrument 45-106 *Prospectus and Registration Exemptions* and "permitted clients" as defined in National Instrument 31-103 *Registration Requirements, Exemptions and Ongoing Registrant Obligations.* Any resale of the shares must be made in accordance with an exemption from the prospectus requirements and in compliance with the registration requirements of applicable securities laws.

LEGAL MATTERS

The validity of the shares of common stock offered hereby will be passed upon for us by Orrick, Herrington & Sutcliffe LLP, San Francisco, California. Certain legal matters in connection with this offering will be passed upon for the underwriters by Cooley LLP, San Francisco, California.

EXPERTS

The consolidated financial statements as of December 31, 2012 and 2013 and for each of the two years in the period ended December 31, 2013 included in this prospectus have been audited by Deloitte & Touche LLP, an independent registered public accounting firm, as stated in their report appearing herein. Such financial statements have been so included in reliance upon the report of such firm given upon their authority as experts in accounting and auditing.

ADDITIONAL INFORMATION

We have filed with the SEC a registration statement on Form S-1, including exhibits and schedules filed with the registration statement, of which this prospectus is a part, under the Securities Act with respect to the shares of common stock we propose to sell in this offering. This prospectus does not contain all of the information set forth in the registration statement and exhibits and schedules to the registration statement. For further information with respect to our company and the shares of common stock to be sold in this offering, reference is made to the registration statement, including the exhibits and schedules thereto. Statements contained in this prospectus as to the contents of any contract or other document referred to in this prospectus are not necessarily complete and, where that contract or other document has been filed as an exhibit to the registration statement, each statement in this prospectus is qualified in all respects by the exhibit to which the reference relates. Copies of the registration statement, including the exhibits and schedules to the registration statement, may be examined without charge at the public reference room of the SEC, 100 F Street, N.E., Room 1580, Washington, DC 20549. Information about the operation of the public reference room may be obtained by calling the SEC at 1-800-SEC-0300. Copies of all or a portion of the registration statement can be obtained from the public reference room of the SEC upon payment of prescribed fees. Our SEC filings, including our registration statement, are also available to you, free of charge, on the SEC's website at http://www.sec.gov.

As a result of this offering, we will become subject to the information and reporting requirements of the Exchange Act and, in accordance with this law, will file periodic reports, proxy statements and other information with the SEC. These periodic reports, proxy statements and other SEC information will be available for inspection and copying at the SEC's public reference facilities and the website referred to above. We also maintain a website at http://www.arcadiabio.com. When this offering is complete, you may access our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Exchange Act with the SEC free of charge at our website as soon as reasonably practicable after such material is electronically filed with, or furnished to, the SEC. The information contained in, or that can be accessed through, our website is not part of this prospectus or the registration statement of which it forms a part.

ARCADIA BIOSCIENCES, INC.
INDEX TO CONSOLIDATED FINANCIAL STATEMENTS

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

The Board of Directors and Stockholders of
Arcadia Biosciences, Inc.
Davis, California

We have audited the accompanying consolidated balance sheets of Arcadia Biosciences, Inc. and its subsidiary (the "Company") as of December 31, 2013 and 2012, and the related consolidated statements of operations, redeemable and convertible preferred stock and stockholders' deficit, and cash flows for each of the two years in the period ended December 31, 2013. These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the financial statements based on our audits.

We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. Our audits included consideration of internal control over financial reporting as a basis for designing audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control over financial reporting. Accordingly, we express no such opinion. An audit also includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, such consolidated financial statements present fairly, in all material respects, the financial position of Arcadia Biosciences, Inc. and subsidiary at December 31, 2013 and 2012, and the results of their operations and their cash flows for each of the two years in the period ended December 31, 2013, in conformity with accounting principles generally accepted in the United States of America.

/s/ Deloitte & Touche LLP

Phoenix, Arizona
November 12, 2014

Arcadia Biosciences, Inc.

Consolidated Balance Sheets

(In thousands, except share and per share amounts)

	As of December 31,		As of September 30, 2014	Pro Forma Stockholders' Equity As of September 30, 2014
	2012	2013	(unaudited)	(unaudited)
ASSETS				
Current assets:				
Cash and cash equivalents	$ 5,350	$ 2,835	$ 21,170	
Accounts receivable	656	649	58	
Amounts due from related parties	100	100	—	
Unbilled revenue	479	275	1,096	
Inventories—current	898	450	443	
Prepaid expenses and other current assets	398	258	219	
Total current assets	7,881	4,567	22,986	
Property and equipment, net	1,125	941	700	
Inventories—noncurrent	1,562	2,536	1,992	
Investment in equity method investee	2,772	932	—	
Cost method investment	—	500	500	
Other noncurrent assets	19	66	290	
TOTAL ASSETS	$ 13,359	$ 9,542	$ 26,468	
LIABILITIES, REDEEMABLE AND CONVERTIBLE PREFERRED STOCK AND STOCKHOLDERS' DEFICIT				
Current liabilities:				
Accounts payable and accrued expenses	$ 2,035	$ 2,513	$ 2,598	
Amounts due to related parties	157	197	45	
Promissory notes—current	—	955	1,029	
Convertible promissory notes	—	3,613	4,364	
Unearned revenue—current	1,164	1,074	1,144	
Derivative liabilities related to convertible promissory notes	—	1,192	1,590	
Total current liabilities	3,356	9,544	10,770	
Promissory notes—noncurrent	—	1,924	1,143	
Note payable to related party	8,000	8,000	8,000	
Unearned revenue—noncurrent	4,687	4,371	3,846	
Other noncurrent liabilities	3,000	3,000	3,000	
Total liabilities	19,043	26,839	26,759	
Commitments and contingencies *(Note 8)*				
Redeemable convertible preferred stock, no par value—10,553,770 (unaudited) authorized as of September 30, 2014; 9,822,283 (unaudited) issued and outstanding as of September 30, 2014; aggregate liquidation preferences of $35,254 (unaudited) as of September 30, 2014	—	—	32,448	
Convertible preferred stock, no par value—94,586,346 (unaudited) shares authorized as of September 30, 2014: 93,540,163 (unaudited) issued and outstanding as of September 30, 2014; aggregate liquidation preferences of $93,540 (unaudited) as of September 30, 2014	—	—	48,783	
Stockholders' deficit:				
Convertible preferred stock, no par value—94,586,346 shares authorized as of December 31, 2012 and 2013: 93,540,163 issued and outstanding as of December 31, 2012 and 2013; aggregate liquidation preferences of $93,540 as of December 31, 2012 and 2013	—	—	—	
Common stock, no par value—135,000,000 shares authorized as of December 31, 2012 and 2013 and 140,000,000 (unaudited) shares authorized as of September 30, 2014, 8,187,736, 8,226,236 and 8,265,611 (unaudited) issued and outstanding as of December 31, 2012 and 2013 and September 30, 2014;	—	—	—	
Additional paid-in capital	76,752	78,334	30,460	
Accumulated deficit	(82,436)	(95,631)	(111,982)	
Total stockholders' deficit	(5,684)	(17,297)	(81,522)	
TOTAL LIABILITIES, REDEEMABLE AND CONVERTIBLE PREFERRED STOCK AND STOCKHOLDERS' DEFICIT	$ 13,359	$ 9,542	$ 26,468	

See accompanying notes to consolidated financial statements.

Arcadia Biosciences, Inc.

Consolidated Statements of Operations

(In thousands, except share and per share amounts)

	Year Ended December 31,		Nine Months Ended September 30,	
	2012	2013	2013	2014
			(unaudited)	
Revenues:				
Product	$ 1,317	$ 1,102	$ 975	$ 266
License	2,526	1,625	626	462
Contract research and government grants	3,167	3,751	2,875	3,456
Total revenues (which includes $206, $144, $33 and $68 from related parties—Note 15)	7,010	6,478	4,476	4,184
Operating expenses:				
Cost of product revenues	909	673	586	1,932
Research and development	7,948	8,404	6,219	7,942
Selling, general and administrative	8,283	7,967	5,970	7,833
Total operating expenses	17,140	17,044	12,775	17,707
Loss from operations	(10,130)	(10,566)	(8,299)	(13,523)
Interest expense	(186)	(626)	(358)	(1,048)
Other income (expense), net	8	5	5	(613)
Loss before income taxes and equity in loss of unconsolidated entity	(10,308)	(11,187)	(8,652)	(15,184)
Income tax provision	(213)	(167)	(131)	(235)
Equity in loss of unconsolidated entity	(1,849)	(1,841)	(1,539)	(932)
Net loss	(12,370)	(13,195)	(10,322)	(16,351)
Accretion of redeemable convertible preferred stock to redemption value	—	—	—	(2,088)
Net loss attributable to common stockholders	$ (12,370)	$ (13,195)	$ (10,322)	$ (18,439)
Net loss per share attributable to common stockholders, basic and diluted	$ (1.51)	$ (1.61)	$ (1.26)	$ (2.24)
Weighted-average number of shares used in per share calculations, basic and diluted	8,181,273	8,213,544	8,209,267	8,233,307
Pro forma net loss per share attributable to common stockholders, basic and diluted (unaudited)		$ (0.13)		$
Weighted-average number of shares used in pro forma per share calculations, basic and diluted (unaudited)		101,753,707		

See accompanying notes to consolidated financial statements.

Arcadia Biosciences, Inc.
Consolidated Statements of Redeemable and Convertible Preferred Stock and Stockholders' Deficit
(In thousands, except share amounts)

	Redeemable Convertible Preferred Stock		Convertible Preferred Stock		Convertible Preferred Stock		Common Stock		Additional Paid-in Capital	Accumulated Deficit	Total Stockholders' Deficit
	Shares	Amount	Shares	Amount	Shares	Amount	Shares	Amount			
Balance—January 1, 2012	—	$ —	—	$ —	93,540,163	$ —	8,178,423	$ —	$ 75,499	$ (70,066)	$ 5,433
Exercise of stock options	—	—	—	—	—	—	9,313	—	4	—	4
Stock-based compensation	—	—	—	—	—	—	—	—	1,249	—	1,249
Net loss	—	—	—	—	—	—	—	—	—	(12,370)	(12,370)
Balance—December 31, 2012	—	—	—	—	93,540,163	—	8,187,736	—	76,752	(82,436)	(5,684)
Exercise of stock options	—	—	—	—	—	—	38,500	—	17	—	17
Stock-based compensation	—	—	—	—	—	—	—	—	1,278	—	1,278
Issuance of common stock warrants	—	—	—	—	—	—	—	—	287	—	287
Net loss	—	—	—	—	—	—	—	—	—	(13,195)	(13,195)
Balance—December 31, 2013	—	—	—	—	93,540,163	—	8,226,236	—	78,334	(95,631)	(17,297)
Exercise of stock options (unaudited)	—	—	—	—	—	—	39,375	—	6	—	6
Preferred stock reclassification (unaudited)	—	—	93,540,163	48,783	(93,540,163)	—	—	—	(48,783)	—	(48,783)
Stock-based compensation (unaudited)	—	—	—	—	—	—	—	—	595	—	595
Issuance of preferred stock, net of issuance costs of $194 (unaudited)	9,822,283	30,360	—	—	—	—	—	—	—	—	—
Issuance of common stock warrants (unaudited)	—	—	—	—	—	—	—	—	2,396	—	2,396
Accretion of redeemable convertible preferred stock to redemption value (unaudited)	—	2,088	—	—	—	—	—	—	(2,088)	—	(2,088)
Net loss (unaudited)	—	—	—	—	—	—	—	—	—	(16,351)	(16,351)
Balance—September 30, 2014 (unaudited)	9,822,283	$32,448	93,540,163	$48,783	—	$ —	8,265,611	$ —	$ 30,460	$ (111,982)	$ (81,522)

See accompanying notes to consolidated financial statements.

Arcadia Biosciences, Inc.

Consolidated Statements of Cash Flows

(In thousands)

	Year Ended December 31,		Nine Months Ended September 30,	
	2012	2013	2013	2014
			(unaudited)	
CASH FLOWS FROM OPERATING ACTIVITIES:				
Net loss	$ (12,370)	$ (13,195)	$ (10,322)	$ (16,351)
Adjustments to reconcile net loss to net cash used in operating activities:				
Depreciation and amortization	378	391	289	272
Loss (gain) on disposal of equipment	2	(3)	(3)	3
Equity in loss of unconsolidated entity	1,849	1,841	1,539	932
Loss related to amendment of Bioceres funding agreement	—	—	—	1,450
Stock-based compensation	1,249	1,278	1,006	595
Common stock warrants issued for services	—	—	—	93
Change in fair value of derivative liabilities related to convertible promissory notes	—	—	—	621
Accretion of debt discount	—	90	—	342
Changes in operating assets and liabilities:				
Accounts receivable	538	7	572	591
Amounts due from related parties	—	—	95	100
Unbilled revenue	(376)	203	(280)	(821)
Inventory	(336)	(525)	(313)	550
Prepaid expenses and other current assets	33	146	141	39
Other noncurrent assets	—	(32)	(37)	—
Accounts payable and other accrued expenses	197	421	536	60
Amounts due to related parties	111	40	78	(151)
Unearned revenue	(863)	(407)	(312)	(454)
Net cash used in operating activities	(9,588)	(9,745)	(7,011)	(12,129)
CASH FLOWS FROM INVESTING ACTIVITIES:				
Cost method investment in Bioceres	—	(500)	(500)	(1,450)
Proceeds from sale of property and equipment	1	—	—	7
Purchases of property and equipment	(286)	(100)	(90)	(40)
Net cash used in investing activities	(285)	(600)	(590)	(1,483)
CASH FLOWS FROM FINANCING ACTIVITIES:				
Capital lease payments	—	(45)	(26)	(59)
Payments for deferred offering costs	—	—	—	(9)
Proceeds from issuance of common stock	4	17	17	6
Proceeds from issuance of redeemable convertible preferred stock and common stock warrants, net of issuance costs	—	—	—	32,845
Payments on issuance fees on convertible notes	—	(22)	(22)	—
Proceeds from notes payable and common stock warrants	—	8,100	2,500	—
Payments on notes payable and convertible promissory notes	—	(220)	(48)	(836)
Proceeds from notes payable to related party	8,000	500	500	—
Payments on notes payable to related party	—	(500)	—	—
Net cash provided by financing activities	8,004	7,830	2,921	31,947
NET (DECREASE) INCREASE IN CASH AND CASH EQUIVALENTS	(1,869)	(2,515)	(4,680)	18,335
CASH AND CASH EQUIVALENTS—Beginning of period	7,219	5,350	5,350	2,835
CASH AND CASH EQUIVALENTS—End of period	$ 5,350	$ 2,835	$ 670	$ 21,170
SUPPLEMENTAL DISCLOSURES OF CASH FLOW INFORMATION:				
Cash paid for interest	$ 150	$ 514	$ 307	$ 473
Cash paid for income taxes	$ 244	$ 85	$ 1	$ 83
NONCASH INVESTING AND FINANCING ACTIVITIES:				
Property and equipment included in accounts payable and accrued expenses	$ 12	$ —	$ —	$ —
Deferred offering costs included in accounts payable and accrued expenses	—	—	$ —	$ 214
Laboratory equipment acquired under a capital lease	$ —	$ 117	$ —	$ —
Accretion of redeemable convertible preferred stock	$ —	$ —	$ —	$ 2,088

See accompanying notes to consolidated financial statements.

Arcadia Biosciences, Inc.

Notes to Consolidated Financial Statements

1. Organization, Description of Business and Liquidity

Arcadia Biosciences, Inc. (the "Company"), is incorporated in the state of Arizona and maintains its headquarters in Davis, California, with additional facilities in Seattle, Washington; Phoenix, Arizona; and American Falls, Idaho.

The Company was incorporated in 2002 to pursue agriculture-based biotechnology business opportunities that improve the environment and human health. The Company is an agricultural biotechnology trait development company with an extensive and diversified portfolio of late-stage crop productivity and product quality traits addressing multiple crops that supply the global food and feed markets. Its traits are focused on high-value enhancements that increase crop yields by enabling plants to more efficiently manage environmental and nutrient stresses, and that enhance the quality and value of agricultural products.

In February 2012, the Company formed Verdeca LLC ("Verdeca", see Note 5), which is jointly owned with Bioceres, Inc. ("Bioceres USA"), a U.S. wholly-owned subsidiary of Bioceres, S.A. ("Bioceres"), an Argentine corporation. Bioceres is an agricultural investment and development company owned by approximately 230 of South America's largest soybean growers. Verdeca was formed to develop and deregulate soybean varieties using both partners' agricultural technologies.

The Company has not yet achieved profitability. As of December 31, 2013 and September 30, 2014, the Company had an accumulated deficit of $95.6 million and $112.0 million (unaudited), respectively, and expects to incur losses for the next several years. Since its inception, the Company has funded its operations primarily with the net proceeds from private placements of convertible preferred stock and convertible notes, as well as proceeds from the sale of its products and payments under license agreements, contract research agreements and government grants. As a result, the Company will need to generate significant revenue to achieve and maintain profitability. As of December 31, 2013 and September 30, 2014, the Company had cash and cash equivalents of $2.8 million and $21.2 million (unaudited), respectively. In the first half of 2014, the Company received net proceeds of $32.8 million from its Series D redeemable convertible preferred stock offering. The maturity of the Company's note originally due in July 2015 has been extended to April 2016 (see Note 16). Management believes that its existing cash and cash equivalents will be sufficient to fund the Company's cash requirements through at least the next 12 months.

2. Significant Accounting Policies

Basis of Presentation and Principles of Consolidation

The consolidated financial statements include the accounts of the Company and Verdeca LLC. All intercompany balances and transactions have been eliminated in consolidation. The Company prepares its consolidated financial statements in accordance with accounting principles generally accepted in the United States of America ("GAAP") and with the Rules and Regulations of the Securities and Exchange Commission. The Company uses a qualitative approach in assessing the consolidation requirement for variable interest entities ("VIEs"). This approach focuses on determining whether the Company has the power to direct the activities of the VIE that most significantly affect the VIE's economic performance and whether the Company has the obligation to absorb losses, or the right to receive benefits, that could potentially be significant to the VIE. For all periods presented, the Company has determined that it is the primary beneficiary of Verdeca, which is a VIE. The Company evaluates its relationships with the VIEs upon the occurrence of certain significant events that affect the design, structure or other factors pertinent to the primary beneficiary determination.

Arcadia Biosciences, Inc.

Notes to Consolidated Financial Statements (Continued)

2. Significant Accounting Policies (Continued)

Unaudited Interim Consolidated Financial Statements

The balance sheet as of September 30, 2014 and the statements of operations and cash flows for the nine months ended September 30, 2013 and 2014 are unaudited. The unaudited interim consolidated financial statements have been prepared on the same basis as the annual consolidated financial statements and, in the opinion of management, reflect all adjustments, which include only normal recurring adjustments, necessary to present fairly the Company's financial position as of September 30, 2014 and its results of operations and cash flows for the nine months ended September 30, 2013 and 2014. The financial data and the other financial information disclosed in these notes to the consolidated financial statements related to the nine-month periods are also unaudited. The results of operations for the nine months ended September 30, 2014 are not necessarily indicative of the results to be expected for the year ending December 31, 2014 or for any other future annual or interim period.

Unaudited Pro Forma Stockholders' Equity

The pro forma stockholders' equity as of September 30, 2014 is presented as though all of the Company's outstanding convertible preferred stock had converted into shares of common stock upon the completion of an initial public offering ("IPO") of the Company's common stock.

Use of Estimates

The preparation of consolidated financial statements in conformity with GAAP requires management to make estimates and assumptions in the Company's consolidated financial statements and notes thereto. Significant estimates and assumptions made by management included the determination of the provision for income taxes, costs to complete government grants and research contracts, and the development period of revenue-generating technologies. Management bases its estimates on historical experience and on various other market-specific and relevant assumptions that management believes to be reasonable under the circumstances. Actual results could differ from those estimates.

Cash and Cash Equivalents

The Company considers any liquid investments with a stated maturity of three months or less at purchase to be cash equivalents. Cash and cash equivalents consist of cash on deposit with banks. The Company limits cash investments to financial institutions with high credit standings; therefore, management believes that there is no significant exposure to any credit risk in the Company's cash and cash equivalents. However, as of December 31, 2012 and 2013 and September 30, 2014 (unaudited), a substantial portion of the Company's cash in depository accounts is in excess of the federal deposit insurance limits.

Accounts Receivable

Accounts receivable represents amounts owed to the Company from product sales, licenses and contract research and government grants. The carrying value of the Company's receivables represents estimated net realizable values. The Company generally does not require collateral and estimates any required allowance for doubtful accounts based on historical collection trends, the age of outstanding receivables, and existing economic conditions. If events or changes in circumstances indicate that

Arcadia Biosciences, Inc.

Notes to Consolidated Financial Statements (Continued)

2. Significant Accounting Policies (Continued)

specific receivable balances may be impaired, further consideration is given to the collectability of those balances and the allowance is recorded accordingly. Past-due receivable balances are written off when the Company's internal collection efforts have been unsuccessful in collecting the amounts due. The Company had no amounts reserved for doubtful accounts at December 31, 2012 and 2013 and September 30, 2014 (unaudited) as the Company expected full collection of the accounts receivable balances as of each of these dates.

Customer Concentration

Significant customers are those that represent 10% or more of the Company's total revenues or gross accounts receivable balance at each respective balance sheet date.

Customers representing greater than 10% of accounts receivable were as follows (in percentages):

	As of December 31,		As of September 30, 2014
	2012	2013	(unaudited)
Customer A	72%	—%	—%
Customer B	13	—	—
Customer C	—	*	23
Customer D	*	*	41
Customer E	—	73	—
Customer F	—	13	—
Customer G	—	—	12
Customer H	—	—	14

* less than 10%

Customers representing greater than 10% of total revenues were as follows (in percentages):

	For Year Ended December 31,		Nine Months Ended September 30, 2014	
	2012	2013	2013	2014
			(unaudited)	
Customer A	16%	—%	*%	—%
Customer E	34	23	12	14
Customer I	*	*	*	12
Customer J	*	11	16	—
Customer K	10	*	*	—
Customer L	11	26	28	49

* less than 10%

Arcadia Biosciences, Inc.

Notes to Consolidated Financial Statements (Continued)

2. Significant Accounting Policies (Continued)

Property and Equipment

Property and equipment acquisitions are recorded at cost. Provisions for depreciation are calculated using the straight-line method over the following average estimated useful lives of the assets:

	Years
Laboratory equipment	5
Software and computer equipment	3
Furniture and fixtures	7
Vehicles	5
Leasehold improvements	2-10*

* Leasehold improvements are depreciated over the shorter of the estimated life of the asset or the remaining life of the lease.

Deferred Offering Costs

Deferred offering costs, which consist of direct incremental legal, consulting, banking and accounting fees relating to the anticipated initial public offering ("IPO"), are capitalized. The deferred offering costs will be offset against IPO proceeds upon the consummation of the offering. In the event the offering is terminated, deferred offering costs will be expensed. As of September 30, 2014, the Company recorded $223,000 (unaudited) of deferred offering costs in other noncurrent assets on the consolidated balance sheets. No amounts were deferred as of December 31, 2012 and 2013.

Impairment of Long-Lived Assets

The Company evaluates if events and circumstances have occurred that indicate the remaining estimated useful life of long-lived assets and identifiable intangible assets may warrant revision or that the remaining balance of these assets may not be recoverable. In evaluating for recoverability, the Company estimates the future undiscounted cash flows expected to result from the use of the assets and their eventual disposition. In the event that the balance of any asset exceeds the future undiscounted cash flow estimate, impairment is recognized based on the excess of the carrying amounts of the asset above its estimated fair value. As of December 31, 2012 and 2013 and September 30, 2014 (unaudited), there was no impairment of the Company's long-lived assets.

Stock-Based Compensation

The Company measures its stock-based compensation awards made to employees and directors based on the estimated fair values of the awards and recognizes the compensation expense over the requisite service period. The Company has selected the Black-Scholes option-pricing model to estimate the fair value of its stock-based awards and compensation expense is recognized using the straight-line method. Stock-based compensation expense is based on the value of the portion of stock-based compensation awards that is ultimately expected to vest. As such, the Company's stock-based compensation expense is reduced for the estimated forfeitures at the date of grant and revised, if necessary, in subsequent periods if actual forfeitures differ from those estimates.

The Company accounts for compensation expense related to stock options granted to non-employees based on the fair values estimated using the Black-Scholes model. Stock options granted to non-employees are remeasured at each reporting date until the award is vested.

Arcadia Biosciences, Inc.

Notes to Consolidated Financial Statements (Continued)

2. Significant Accounting Policies (Continued)

Income Taxes

The Company uses the asset and liability method of accounting for income taxes. Under this method, deferred tax assets and liabilities are determined based on the differences between the financial reporting and the tax bases of assets and liabilities and are measured using the enacted tax rates and laws that will be in effect when the differences are expected to reverse. A valuation allowance is provided when it is more likely than not that some portion or all of a deferred tax asset will not be realized.

Net Loss per Share

Basic net loss per share, which excludes dilution, is computed by dividing the net loss attributable to common stockholders by the weighted-average number of shares of common stock outstanding during the period. Diluted net loss per share reflects the potential dilution that could occur if securities or other contracts to issue common stock, such as stock options, convertible promissory notes, convertible preferred stock, redeemable convertible preferred stock and warrants, result in the issuance of common stock which share in the losses of the Company. Certain potential shares of common stock have been excluded from the computation of diluted net loss per share as their effect would be anti-dilutive. Such potentially dilutive shares are excluded when the effect would be to reduce the loss per share. The Company's convertible preferred stock are considered to be participating securities as they are entitled to participate in undistributed earnings with shares of common stock. Due to net losses, there is no impact on earnings per share calculation in applying the two-class method since the participating securities have no legal requirement to share in any losses.

Unaudited Pro Forma Net Loss per Share

Pro forma basic and diluted net loss per share attributable to common stockholders has been computed to give effect to the conversion of all outstanding shares of the redeemable convertible preferred stock and the convertible preferred stock upon the closing of an IPO.

Revenue Recognition

Revenue is generated through product sales, license agreements, contract research agreements, and government grants. The Company recognizes revenue when the following criteria have been met: persuasive evidence of an arrangement with the customer exists; price and terms of the arrangement are fixed or determinable; delivery of the product has occurred or the service has been performed in accordance with the terms of the arrangement; and collectability is reasonably assured.

For revenue agreements with multiple-element arrangements, such as license and contract agreements, the Company analyzes the arrangements to determine whether the deliverables can be separated or whether they must be accounted for as a single unit of accounting. This determination is generally based on whether any deliverable has stand-alone value to the customer. This analysis also establishes a selling price hierarchy for determining how to allocate arrangement consideration to identified units of accounting. When deliverables are separable, consideration received is allocated to the separate units of accounting based on the relative selling price method and the appropriate revenue recognition principles are applied to each unit. The selling price used for each unit of accounting is based on estimated selling price as neither vendor-specific nor third-party evidence is available. When the Company determines that an arrangement should be accounted for as a single unit of accounting, it

Arcadia Biosciences, Inc.

Notes to Consolidated Financial Statements (Continued)

2. Significant Accounting Policies (Continued)

must determine the period over which the performance obligations will be performed and revenue will be recognized over the performance period.

Product Revenues

Product revenues consist of sales of gamma linolenic acid ("GLA") safflower oil (i.e., SONOVA® brand GLA safflower oil). Product revenues are recognized once passage of title has occurred, contractually specified acceptance criteria have been met, and all other revenue recognition criteria have been met. Shipping and handling costs charged to customers are recorded as revenues and included in cost of product revenues at the time the sale is recognized.

License Revenues

The Company's license agreements generally includes up-front, nonrefundable license fees, annual license fees, and subsequent milestone payments. Upon commercialization of a product utilizing a licensed technology, the Company receives certain value-sharing payments associated with the incremental revenue attributable to the licensed technology.

The Company has determined that, at the inception of each license agreement, there is only one deliverable for the license for, access to, and assistance with the development of the specified intellectual property. The up-front nonrefundable license fees are recognized as revenue proportionally over the development period, which approximates the expected efforts by the Company. The development period is estimated based upon factors such as traits, nature of crops and geographies, which are used to establish the initial deferral period. The Company continually reviews such estimates based on progress toward product commercialization. If the deferral period estimate changes, the amount of revenue recognized during the period is adjusted to reflect the updated deferred balances as of the current period-end. The annual license fees are payable at the end of the annual period and such fees are not required to be paid if the agreement is cancelled prior to the due date. Therefore, the annual license fees are only recognized when they become due.

The Company's license agreements generally include contingent milestone payments in the development life cycle of the related technology, such as achievement of specific technological targets, successful results from field trials, filing for approval with regulatory agencies, approvals granted by regulatory agencies and commercial launch of a product utilizing the licensed technology. The Company evaluates whether each milestone is substantive and at risk at the time the agreement is executed. This evaluation includes an assessment of whether (a) the consideration is commensurate with either (i) the entity's performance to achieve the milestone or (ii) the enhancement of the value of the delivered item(s) as a result of a specific outcome resulting from the entity's performance to achieve the milestone; (b) the consideration relates solely to past performance; and (c) the consideration is reasonable relative to all of the deliverables and payment terms within the arrangement. The Company generally considers non-refundable milestones that the Company expects to be achieved as a result of the Company's efforts during the period of the Company's performance obligations under the license agreement to be substantive and recognizes them as revenue upon the achievement of the milestone, assuming all other revenue recognition criteria are met.

Once a product containing one or more of the Company's traits is commercialized, the Company is entitled to receive a portion of the incremental revenue that the trait generates for its commercial partner. These value-sharing payments will be recorded on the accrual basis when results are reliably measurable, collectability is reasonably assured, and all other revenue recognition criteria are met.

Arcadia Biosciences, Inc.

Notes to Consolidated Financial Statements (Continued)

2. Significant Accounting Policies (Continued)

Contract Research Revenues

Contract research revenues consist of amounts earned from performing contracted research activities for third parties. Activities performed are related to breeding programs or the genetic engineering of plants and are subject to an executed agreement. Generally, fees for research and development activities are recognized as the services are performed over the performance period, as specified in the respective agreements, assuming all other revenue recognition criteria are met.

Similar to the license agreements, under the contract research agreements, once a product containing one or more of the Company's traits is commercialized, the Company is entitled to receive a portion of the incremental revenue that the trait generates for its commercial partner. These value-sharing payments will be recorded on the accrual basis when results are reliably measurable, collectability is reasonably assured, and all other revenue recognition criteria are met.

Government Grant Revenues

The Company generates revenue from grant payments received from government entities for research and development activities over a contractually defined period. Revenues from government grants are recognized in the period during which the related costs are incurred, provided that the conditions under which the government grants were provided have been met.

Revenues from government entities accounted for approximately 34% and 44% of the Company's total revenue recognized for the years ended December 31, 2012 and 2013, respectively, and 49% (unaudited) and 68% (unaudited) for the nine months ended September 30, 2013 and 2014, respectively.

Unearned Revenue

The Company defers revenue to the extent that cash received in conjunction with a license agreement, contract or grant exceeds the revenue recognized in accordance with Company policies.

Research and Development Expenses

Research and development expenses consist of costs incurred in the discovery, development, and testing of the Company's product candidates. These expenses consist primarily of employee salaries and benefits, stock-based compensation, fees paid to subcontracted research providers, fees associated with in-licensing technology, royalty agreements, land leased for field trials, chemicals and supplies and other external expenses. These costs are expensed as incurred. Additionally, as disclosed in Note 8, the Company is required from time to time to make certain milestone payments in connection with the development of technologies. These milestone payments are expensed at the time the milestone is achieved and deemed payable.

SONOVA® GLA Safflower Oil Inventory

Proprietary safflower plants are grown, producing seed with a high-GLA content. This seed is used for subsequent plantings or processed, and sold as GLA oil. Amounts inventoried consist primarily of fees paid to contracted cooperators to grow the crops and costs to process and store harvested seed. Inventory costs are tracked on a lot-identified basis, valued at the lower of cost or market, and are included as cost of product revenues when sold. The Company provides for inventory reserves when conditions indicate that the selling price may be less than cost due to physical deterioration,

Arcadia Biosciences, Inc.

Notes to Consolidated Financial Statements (Continued)

2. Significant Accounting Policies (Continued)

obsolescence, changes in price levels, or other factors. Additionally, the Company provides reserves for excess and slow-moving inventory on hand that is not expected to be sold to reduce the carrying amount of excess slow-moving inventory to its estimated net realizable value. The reserves are based upon estimates about future demand from the Company's customers and distributors and market conditions. The Company had inventory reserves of $0, $0 and $1.7 million (unaudited) as of December 31, 2012 and 2013 and September 30, 2014. During the nine months ended September 30, 2014, the Company recorded a reserve of $1.7 million against inventory primarily as a result of changes in conditions of specific customers and regulatory delays related to the use of its Sonova products by certain new industries.

The inventories—current line item in the balance sheet consists of the cost of oil inventory forecasted to be sold in the next 12 months, as of the balance sheet date. The inventories—noncurrent line item consists of oil and seed inventory expected to be used in production or sold beyond the next 12 months, as of the balance sheet date.

Raw materials inventory consists primarily of seed production costs incurred by our contracted cooperators. Finished goods inventory consists of GLA oil that is available for sale. Inventories consist of the following (in thousands):

	As of December 31,		As of September 30,
	2012	2013	2014 (unaudited)
Raw Materials	$ 228	$ 1,179	$ 864
Finished Goods	2,232	1,807	1,571
Inventory	2,460	2,986	2,435

Investment in Unconsolidated Entity

The equity method is used to account for the Company's investment in Limagrain Cereal Seeds LLC ("LCS"), an unconsolidated entity over which the Company exercises significant influence, but does not have a controlling interest. Under the equity method, the Company's share of the unconsolidated entity's loss is included in equity method loss in the statements of operations. See Note 4 for further discussion. No distributions were received in the years ended December 31, 2012 and 2013 or the nine months ended September 30, 2014 (unaudited).

The Company regularly reviews each of its investments for impairment by determining if the investment has sustained an other-than-temporary decline in its value, in which case the investment is written down to its fair value by a charge to earnings. Factors that are considered by the Company in determining whether an other-than-temporary decline in value has occurred include (i) the market value of the investment in relation to its cost basis, (ii) the financial condition of the investment, and (iii) the Company's intent and ability to retain the investment for a sufficient period of time to allow for recovery of the market value of the investment. As of December 31, 2012 and 2013 and September 30, 2014 (unaudited), there was no impairment of the Company's equity method investment.

Arcadia Biosciences, Inc.

Notes to Consolidated Financial Statements (Continued)

2. Significant Accounting Policies (Continued)

Cost Method Investment

Investments in equity securities of companies in which the Company holds less than 20% voting interest and on which the Company does not have the ability to exercise significant influence are accounted for under the cost method.

Contingent Liability Related to the Anawah Acquisition

On June 15, 2005, the Company completed its agreement and plan of merger and reorganization with Anawah, Inc. ("Anawah" or "Sellers"), to purchase the Sellers' food and agricultural research company through a stock purchase. Pursuant to the merger with Anawah, and in accordance with the FASB Statement No. 141, *Business Combinations*, which was applicable at the time of the acquisition, the Company incurred a contingent liability not to exceed $5.0 million. This liability represents amounts to be paid to Anawah's previous stockholders for cash collected on revenue recognized by the Company upon commercial sale of certain specific products developed using technology acquired in the purchase. As of December 31, 2010, the Company ceased activities relating to three of the six Anawah product programs and, as a result, reduced the contingent liability to $3.0 million. The Company believes the contingent liability is appropriate as it continues to pursue three development programs using this technology.

Fair Value of Financial Instruments

Fair value accounting is applied for all financial assets and liabilities and non-financial assets and liabilities that are recognized or disclosed at fair value in the consolidated financial statements on a recurring basis (at least annually). Assets and liabilities recorded at fair value in the consolidated financial statements are categorized based upon the level of judgment associated with the inputs used to measure their fair value. Hierarchical levels, which are directly related to the amount of subjectivity, associated with the inputs to the valuation of these assets or liabilities are as follows:

- Level 1 inputs are quoted prices (unadjusted) in active markets for identical assets or liabilities that the Company can access at the measurement date.

- Level 2 inputs are observable inputs other than quoted prices in active markets for identical assets and liabilities, quoted prices for identical or similar assets or liabilities in inactive markets, or other inputs that are observable or can be corroborated by observable market data for substantially the full term of the assets or liabilities.

- Level 3 inputs are unobservable inputs for the asset or liability.

The carrying values of the Company's financial instruments, including cash equivalents, accounts receivable, and accounts payable, approximated their fair values due to the short period of time to maturity or repayment.

The carrying values of the Company's promissory notes, convertible promissory notes, and notes payable approximate their fair values for the years ended December 31, 2012 and 2013 and the nine months ended September 30, 2013 and 2014 (unaudited) as the market rates currently available to the Company and other assumptions have not changed significantly.

Arcadia Biosciences, Inc.

Notes to Consolidated Financial Statements (Continued)

2. Significant Accounting Policies (Continued)

The Company's Level 3 liabilities measured and recorded on a recurring basis consist of derivative liabilities related to the convertible promissory note (see Note 7). The following table sets forth a summary of the changes in the fair value and other adjustments of these derivative liabilities (in thousands):

Balance at December 31, 2012	$ —
Fair value of derivative liabilities	1,192
Balance at December 31, 2013	1,192
Change in fair value and other adjustments (unaudited)	398
Balance at September 30, 2014 (unaudited)	$ 1,590

Recent Accounting Pronouncements

In April 2014, the Financial Accounting Standards Board, or FASB, issued Accounting Standards Update (ASU) ASU 2014-08, *Presentation of Financial Statements (Topic 205) and Property, Plant, and Equipment (Topic 36)*, which amends the definition of a discontinued operation in ASC 205-20 and requires entities to provide additional disclosures about disposal transactions that do not meet the discontinued-operations criteria. The revised guidance will change how entities identify and disclose information about disposal transactions under U.S. GAAP. The ASU applies to all entities and is effective for annual periods beginning after December 15, 2014 and interim periods thereafter, with early adoption permitted. The Company does not anticipate that the adoption of this ASU will materially change the presentation of its consolidated financial statements.

In May 2014, the FASB issued ASU 2014-09, *Revenue from Contracts with Customers*, which requires an entity to recognize the amount of revenue to which it expects to be entitled for the transfer of promised goods or services to customers. The ASU will replace most existing revenue recognition guidance in U.S. GAAP when it becomes effective. The new standard will be effective for the Company on January 1, 2017, which is the effective date for public companies. Non-public entities have an additional one year to adopt this standard. Early application is not permitted. The standard permits the use of either the retrospective or cumulative effect transition method. The Company is evaluating the effect that ASU 2014-09 will have on its consolidated financial statements and related disclosures. The Company has not yet selected a transition method nor has it determined the effect of the standard on its ongoing financial reporting.

In August 2014, the FASB issued ASU 2014-15, *Disclosure of Uncertainties about an Entity's Ability to Continue as a Going Concern*, which provides guidance on determining when and how to disclose going-concern uncertainties in the consolidated financial statements. The new standard requires management to perform interim and annual assessments of an entity's ability to continue as a going concern within one year of the date the consolidated financial statements are issued. An entity must provide certain disclosures if "conditions or events raise substantial doubt about the entity's ability to continue as a going concern." The ASU applies to all entities and is effective for annual periods ending after December 15, 2016, and interim periods thereafter, with early adoption permitted. The Company does not anticipate a material change to its consolidated financial statements upon the adoption of this ASU. However, it will be required to evaluate and determine if further disclosure is necessary at each balance sheet date.

Arcadia Biosciences, Inc.

Notes to Consolidated Financial Statements (Continued)

3. Property and Equipment, Net

Property and equipment, net, consisted of the following (in thousands):

	As of December 31,		As of September 30,
	2012	2013	2014 (unaudited)
Laboratory equipment	$ 2,482	$ 2,608	$ 2,598
Software and computer equipment	414	415	457
Furniture and fixtures	148	151	151
Vehicles	188	188	188
Leasehold improvements	1,880	1,882	1,882
Assets under construction	70	27	7
Property and equipment, gross	5,182	5,271	5,283
Less accumulated depreciation and amortization	(4,057)	(4,330)	(4,583)
Property and equipment, net	$ 1,125	$ 941	$ 700

The Company acquired laboratory equipment during 2013 under a capital lease. This equipment has a gross value of $117,000 and accumulated depreciation expense of $39,000 and $97,000 (unaudited) as of December 31, 2013 and September 30, 2014, respectively. This equipment is included in property and equipment and related depreciation is included in depreciation expense.

Depreciation and amortization expense is $378,000 and $391,000 for the years ended December 31, 2012 and 2013, respectively and $289,000 (unaudited) and $272,000 (unaudited) for the nine months ended September 30, 2013 and 2014, respectively.

4. Investment in Unconsolidated Entity

Limagrain Cereal Seeds LLC

The Company owns a 35% ownership position in LCS. The remaining 65% of LCS is owned by Vilmorin & Cie ("Limagrain"), a major global producer and marketer of field crop and vegetable seeds, through its wholly owned subsidiary, Vilmorin USA ("VUSA"). LCS improves and develops new wheat and barley varieties utilizing genetic and breeding resources, as well as advanced technologies from Limagrain and the Company. Funding for LCS comes from an initial pro rata equity investment from each partner and with subsequent financing in the form of $13.0 million in debt from VUSA, which has a maturity date of January 15, 2015. While it is the Company's expectation that VUSA will provide LCS with additional debt financing as needed, should additional capital in the form of equity be necessary to support the operations of LCS, the Company has the option to fund its pro rata share of such cash or elect to have its ownership percentage diluted.

Arcadia Biosciences, Inc.

Notes to Consolidated Financial Statements (Continued)

4. Investment in Unconsolidated Entity (Continued)

Summarized condensed financial information related to the unconsolidated entity, accounted for using the equity method is as follows (in thousands):

	As of and for the year ended December 31,		As of and for the nine months ended September 30, 2014 (unaudited)
	2012	2013	
Assets:			
Current assets	$ 798	$ 750	$ 1,015
Non-current assets	10,764	10,685	10,493
Total assets	11,562	11,435	11,508
Liabilities and equity:			
Current liabilities	3,903	9,035	14,017
Equity of Arcadia Biosciences, Inc.(1)	2,772	932	(787)
Equity of VUSA	4,887	1,468	(1,722)
Total liabilities and equity	$ 11,562	$ 11,435	$ 11,508
Revenue	$ 1,505	$ 2,576	$ 1,511
Gross profit	930	1,380	617
Loss from continuing operations	(5,039)	(5,201)	(4,770)
Net loss	(5,282)	(5,259)	(4,909)
Arcadia Biosciences, Inc.'s share of pretax loss(2)	(1,849)	(1,841)	(932)

(1) As of December 31, 2012 and 2013, the Company's investment exceeded its proportionate share of the net assets of the unconsolidated entity by $91,000. This difference is not amortized. As of September 30, 2014 the investment balance has been reduced to $0.

(2) The Company's share of the pretax loss is recorded as an equity method loss in the statements of operations.

5. Variable Interest Entity

In February 2012, the Company formed Verdeca LLC, which is jointly owned with Bioceres, Inc. ("Bioceres"), a U.S. wholly owned subsidiary of Bioceres, S.A., an Argentine corporation. Bioceres, S.A. is an agricultural investment and development company owned by approximately 230 of South America's largest soybean growers. Verdeca was formed to develop and deregulate soybean varieties using both partners' agricultural technologies.

Both the Company and Bioceres incur expenses in support of specific activities agreed, as defined by joint work plans, which apply fair market value to each partner's activities. Unequal contributions of services are equalized by the partners through cash payments. Verdeca is not the primary obligor for these activities performed by the Company or Bioceres. An agreement executed in conjunction with the formation of Verdeca specifies that if Bioceres determines it requires cash to fund its contributed services (subject to certain annual limits), Bioceres, S.A. may elect to sell shares of its common stock to the Company for an amount not exceeding $5.0 million in the aggregate over a four-year period. The

Arcadia Biosciences, Inc.

Notes to Consolidated Financial Statements (Continued)

5. Variable Interest Entity (Continued)

Company determined that its commitment to purchase common stock in Bioceres, S.A. as a means to provide capital to Verdeca resulted in a de facto agency relationship between the Company and Bioceres. The Company considers qualitative factors in assessing the primary beneficiary which include understanding the purpose and design of the VIE, associated risks that the VIE creates, activities that could be directed by the Company, and the expected relative impact of those activities on the economic performance of the VIE. Based on an evaluation of these factors, the Company concluded that it is the primary beneficiary of Verdeca.

As a result of the agreement to fund future contributions by Bioceres, the Company purchased common stock of Bioceres, S.A. in the amount of $500,000 in January 2013, which is included in the cost method investment on the balance sheet as of December 31, 2013. Additional common stock purchases were made in the amount of $700,000 in January 2014, $250,000 in April 2014, and $500,000 in August 2014. The Company's remaining maximum commitment to purchase stock in Bioceres, S.A. under the original funding agreement amounts to $2.0 million for 2014 and $1.2 million for 2015. In September 2014, the Company and Bioceres, S.A. entered into an agreement to reduce the annual commitment for 2014 to $500,000 from the original $2.0 million and to eliminate the 2015 commitment amount of $1.2 million. In consideration for these amendments, the Company surrendered 1,832 shares of Bioceres, S.A. held by the Company. The Company recorded an expense of $1.5 million related to this agreement, which is classified as research and development expense in the consolidated statement of operations for the nine months ended September 30, 2014.

In addition, the Company has a right to require Bioceres, S.A. to repurchase any shares of common stock then owned by the Company upon the occurrence of certain events specified in the agreement, and similarly, Bioceres, S.A. has the right to require the Company to sell back any shares of common stock owned by the Company under certain circumstances. Management has evaluated the carrying value of its investment in Bioceres and has determined there has been no impairment.

Under the terms of the joint development agreement, the Company has incurred direct expenses and allocated overhead in the amount of $1.0 million and $1.2 million for the year ended December 31, 2012 and 2013, respectively, and $907,000 (unaudited) and $703,000 (unaudited) for the nine months ended September 30, 2013 and 2014, respectively.

Arcadia Biosciences, Inc.

Notes to Consolidated Financial Statements (Continued)

6. Accounts Payable and Accrued Expenses

Accounts payable and accrued expenses consisted of the following (in thousands):

	As of December 31,		As of September 30,
	2012	2013	2014
			(unaudited)
Accounts payable—trade	$ 137	$ 220	$ 137
Payroll and benefits	945	1,098	803
Research and development	234	623	490
Royalty fees	330	175	109
Accrued inventory costs	—	—	328
Accrued interest on notes payable	—	19	10
Consulting	142	48	30
Rent and utilities	100	82	88
Legal	43	13	3
Capital lease obligation	—	72	13
Accrued withholding taxes	—	83	235
Other	104	80	352
Total accounts payable and accrued expenses	$ 2,035	$ 2,513	$ 2,598

7. Debt

Long-term Debt

Long-term debt consisted of the following (in thousands):

	As of December 31,		As of September 30,
	2012	2013	2014
			(unaudited)
Note payable to related party	$ 8,000	$ 8,000	$ 8,000
Promissory note	—	1,806	1,345
Promissory note	—	1,073	827
Total	8,000	10,879	10,172
Less current portion	—	(955)	(1,029)
Long-term portion	$ 8,000	$ 9,924	$ 9,143

In July 2012, a 36-month $8.0 million term note was executed with Moral Compass Corporation ("MCC"), the Company's largest stockholder (see Note 15), and is subordinate to the promissory notes and convertible promissory notes. The interest rate on the loan is prime plus 2%, with interest paid monthly in arrears. The principal is due in full at maturity in July 2015. This note was amended in November 2014 (see Note 16). The balance of the note, inclusive of accrued interest, was approximately $8.0 million as of December 31, 2012 and 2013 and September 30, 2014. Accrued interest of $36,000, $36,000, and $35,000 are recorded in amounts due to related parties on the balance sheet as of December 31, 2012 and 2013 and September 30, 2014, respectively.

Arcadia Biosciences, Inc.

Notes to Consolidated Financial Statements (Continued)

7. Debt (Continued)

Promissory notes were executed with an unrelated party in August 2013 and November 2013 in the amounts of $2.0 million and $1.1 million, respectively. The interest rate on the notes is 10% with principal and interest due in 36 equal monthly installments over the course of the three-year terms. Monthly principal and interest on the $2.0 million note is $65,000 and the three-year term ends in August 2016. Monthly principal and interest on the $1.1 million note is $35,000 and the three-year term ends in November 2016. The balance of the promissory notes, inclusive of accrued interest, was $2.9 million and $2.2 million (unaudited) as of December 31, 2013 and September 30, 2014, respectively.

In addition, in July 2013, we entered into a short-term loan agreement for $500,000 with MCC. The interest rate on the loan is 7.5%. The principal and related interest were paid in full in December 2013. Interest expense related to this loan was $19,000 in the year ended December 31, 2013.

Convertible Promissory Notes

A note and warrant purchase agreement was executed in September 2013, with Mahyco International Pte Ltd., ("Mahyco"), a licensee of the Company's technologies. The Company issued two notes under this agreement in the amounts of $500,000 in September 2013 and $4.5 million in December 2013, both of which are subordinate to the promissory notes. The interest on the notes is prime plus 2%, compounded monthly over the course of the five-year term ending September and December 2018, respectively, and is payable on the maturity date. At any time during the term, the lender may convert all or part of the outstanding balance of the note (including principal and accrued but unpaid interest) into common stock of the Company at $4.13 per share.

At its option, Mahyco may offset future fee payments to the Company against the outstanding balance of the note (including principal and accrued but unpaid interest). Mahyco has the right to demand immediate settlement of a portion of the outstanding balance of the convertible promissory note, the amount of which shall be mutually agreed by the Company and the lender prior to such settlement. The Company recorded a derivative liability of $0.4 million for the initial fair value of the settlement obligation. The derivative liability was valued using the binomial lattice option-pricing method with the following assumptions: a term of 5 years, a risk-free rate of 1.50%, and volatility of 108%. The lender has the right, at its option, to place another $5.0 million of convertible debt with the Company during the five-year term. The Company recorded a derivative liability of $0.8 million for the initial fair value of the Company's obligation to issue the additional $5.0 million of convertible promissory notes. The derivative liability was valued using the Monte Carlo simulation method with the following assumptions: 80% probability of the additional financing, a term of 5 years, a risk-free rate of 1.5%, and volatility of 108%. Changes in the fair value of the derivative liabilities are recorded to other income, net in the consolidated statement of operations.

The Company also issued to the lender a warrant to purchase 302,665 shares of common stock at an exercise price of $4.13. The warrant was issued in December 2013, vested immediately and remains exercisable throughout the five-year term. The fair value of the common stock warrant on the date of issuance was estimated using an option-pricing valuation model. The Company allocated the gross proceeds to the derivative liabilities based on their initial fair values and the remainder of the proceeds to the convertible promissory note and warrants on a relative fair value basis. The amount allocated to the common stock warrant was recorded as a debt discount to be amortized as interest expense over the estimated term of the loan agreement using the effective interest rate method. The Company

Arcadia Biosciences, Inc.

Notes to Consolidated Financial Statements (Continued)

7. Debt (Continued)

recognized interest expense related to the convertible promissory note of $91,000 for the year ended December 31, 2013 and $670,000 (unaudited) for the nine months ended September 30, 2014.

Minimum principal payments on the Company's outstanding debt, consisting of the term note, promissory notes and the convertible promissory notes, as of December 31, 2013 are as follows (in thousands):

	As of December 31, 2013
2014	$ 955
2015	9,055
2016	870
2017	—
2018	5,000
Total	$ 15,880

8. Commitments and Contingencies

Leases

The Company leases office and laboratory space, greenhouse space, grain storage bins, warehouse space, and equipment under operating lease agreements having initial lease terms ranging from three to five years, including certain renewal options available to the Company at market rates. The Company also leases land for field trials on a short-term basis. Future minimum payments under non-cancelable operating leases in effect as of December 31, 2013, are presented below (in thousands):

Years Ending December 31,	Amounts
2014	$ 859
2015	392
2016	135
2017	94
Total future minimum payments under non-cancelable operating leases	$ 1,480

The Company acquired laboratory equipment under a capital lease during 2013. The remaining payments under the capital lease total $74,000, of which $2,000 is interest and $72,000 is principal, as of December 31, 2013 and are due in 2014.

Rent expense under all operating leases totaled $1.2 million and $1.3 million for the years ended December 31, 2012 and 2013, respectively, and $990,000 (unaudited) and $767,000 (unaudited) for the nine months ended September 30, 2013 and 2014, respectively.

Legal Matters

From time to time, in the ordinary course of business, the Company may become involved in certain legal proceedings. As of December 31, 2012 and 2013 and September 30, 2014, the Company was not involved in any legal proceedings.

Arcadia Biosciences, Inc.

Notes to Consolidated Financial Statements (Continued)

8. Commitments and Contingencies (Continued)

Contracts

The Company has entered into contract research agreements with unrelated parties that require the Company to pay certain funding commitments. The initial terms of these agreements range from one to three years in duration and in certain cases are cancelable.

The Company licenses certain technologies via executed agreements ("In-Licensing Agreements") that are used to develop and advance the Company's own technologies. The Company has entered into various In-Licensing Agreements with related and unrelated parties that require the Company to pay certain license fees, royalties, and/or milestone fees. In addition, certain royalty payments ranging from 2% to 15% of net revenue amounts as defined in the In-Licensing Agreements will be due.

The minimum payment for non-cancelable annual license fees is $25,000 due during the year ended December 31, 2013. Royalties on licensed revenue accrued as of December 31, 2012 and 2013 and September 30, 2014, were $451,000, $336,000 and $120,000 (unaudited), respectively. Royalties are included within research and development on the consolidated statements of operations.

Milestone payments are contingent upon the successful development or implementation of various technologies. Payments for milestones yet to be achieved total $2.1 million (unaudited) as of September 30, 2014. The timing of the payments is not determinable at this time pending research and development currently in progress; however, no significant payments were made during the years ended December 31, 2012 and 2013 or the nine months ended September 30, 2014 (unaudited).

The Company could be adversely affected by certain actions by the government as it relates to government contract revenue received in prior years. Government agencies, such as the Defense Contract Audit Agency routinely audit and investigate government contractors. These agencies review a contractor's performance under its agreements; cost structure; and compliance with applicable laws, regulations, and standards. The agencies also reviews the adequacy of, and a contractor's compliance with, its internal control systems and policies, including the contractor's purchasing, property, estimating, compensation, and management information systems. While the Company's management anticipates no adverse result from an audit, should any costs be found to be improperly allocated to a government agreement, such costs will not be reimbursed, or if already reimbursed, may need to be refunded. If an audit uncovers improper or illegal activities, civil and criminal penalties and administrative sanctions, including termination of contracts, forfeiture of profits, suspension of payments or fines, and suspension or prohibition from doing business with the government could occur. In addition, serious reputational harm or significant adverse financial effects could occur if allegations of impropriety were made against the Company. There are no current audits relating to government grant revenues in process.

Arcadia Biosciences, Inc.

Notes to Consolidated Financial Statements (Continued)

9. Common Stock and Redeemable and Convertible Preferred Stock

Common Stock

As of December 31, 2013, the Company had reserved the following shares of common stock, on an as-converted basis, for future issuance as follows:

Series A convertible preferred stock	67,063,127
Series B convertible preferred stock	16,890,690
Series C convertible preferred stock	9,586,346
Stock option plan:	
Options outstanding	14,731,270
Options available for future grants	2,418,046
Total	110,689,479

Redeemable and Convertible Preferred Stock

Convertible preferred stock as of December 31, 2012 and 2013 consisted of the following:

	Shares Authorized	Shares Issued and Outstanding	Net Carrying Value	Aggregate Liquidation Preference
		(In thousands, except share data)		
Series A	68,000,000	67,063,127	$ 23,324	$ 67,063
Series B	17,000,000	16,890,690	15,202	16,891
Series C	9,586,346	9,586,346	10,257	9,586
Total convertible preferred stock	94,586,346	93,540,163	$ 48,783	$ 93,540

Redeemable and convertible preferred stock as of September 30, 2014 (unaudited) consisted of the following:

	Shares Authorized	Shares Issued and Outstanding	Net Carrying Value	Aggregate Liquidation Preference
		(In thousands, except share data)		
Series A	68,000,000	67,063,127	$ 23,324	$ 67,063
Series B	17,000,000	16,890,690	15,202	16,891
Series C	9,586,346	9,586,346	10,257	9,586
Series D	10,553,770	9,822,283	32,448	35,254
Total redeemable and convertible preferred stock	105,140,116	103,362,446	$ 81,231	$ 128,794

On March 28, 2014, the Company entered into an agreement with certain investors to issue 9,822,283 shares of its Series D redeemable convertible preferred stock at an original issue price of $3.36 per share, and closings that were scheduled to be completed within 90 days from the initial close. The holders of the Series D redeemable convertible preferred stock also received warrants for the purchase of an aggregate of 4,911,145 shares of common stock, with an exercise price of $4.54 per share, and exercisable at any time within five years from the date of issuance. The warrants issued to

Arcadia Biosciences, Inc.

Notes to Consolidated Financial Statements (Continued)

9. Common Stock and Redeemable and Convertible Preferred Stock (Continued)

Series D redeemable convertible preferred stock are freestanding instruments that has been classified within equity. The proceeds from the issuance of the Series D redeemable convertible preferred stock and common stock warrants have been allocated using the relative fair values: $30.6 million to the Series D redeemable convertible preferred stock and $2.5 million to the common stock warrants. The resulting discount from the issuance of the common stock warrants have been adjusted against the Series D redeemable convertible preferred stock with a corresponding increase in additional paid-in capital. The Company incurred direct and incremental issuance costs of approximately $0.2 million related to the Series D redeemable convertible preferred stock. The Company recorded the proceeds from Series A, Series B and Series C convertible preferred stock and Series D redeemable convertible preferred stock, net of issuance costs and common stock warrants issued.

The Company also incurred transaction costs for an advisor of approximately $2.1 million, which includes a warrant for the purchase of 133,781 shares of common stock issued to the advisor with a fair value of approximately $0.1 million. This common stock warrant has an exercise price of $3.36 per share, is exercisable anytime within five years from the date of issuance and is recorded within the Company's equity. As these transaction costs are not considered direct issuance costs, the $2.1 million is included in selling, general and administrative expenses for the nine months ended September 30, 2014.

In connection with the issuance of the Series D redeemable convertible preferred stock and the resulting amendment to the Articles of Incorporation, the Company reclassified the Series A, Series B and Series C convertible preferred stock outside of stockholders' deficit because, in the event of certain deemed liquidation events that are not solely within its control, the shares would become redeemable at the option of the holders. The Company did not adjust the carrying values of the Series A, Series B, Series C convertible preferred stock to the liquidation values of such shares, since a liquidation event was not probable at any of the balance sheet dates. Subsequent adjustments to increase or decrease the carrying values to the ultimate liquidation values will be made only if and when it becomes probable that such a liquidation event will occur.

As the Series D convertible preferred stock is redeemable at the request of the holder on or after the eight-year anniversary from the original issuance date, the Company classified the Series D redeemable convertible preferred stock outside of stockholders' deficit because of the date certain redemption that is not within the control of the Company. The Company accretes the carrying value of the Series D redeemable convertible preferred stock to the redemption amount on the eighth anniversary using the interest method through periodic charges to additional paid-in capital, which amounted to $2.1 million for the nine months ended September 30, 2014. The redemption amount is the greater of (i) two times the original issue price of the Series D redeemable convertible preferred stock plus accrued and unpaid dividends through the redemption date, or (ii) the fair market value of the Series D redeemable convertible preferred stock. The redemption value also includes dividends which are payable in arrears upon redemption and aggregate to $97.0 million over the redemption period of eight years. The redemption amount of outstanding Series A, Series B and Series C convertible stock is equal to its liquidation value, or $1.00 per share.

Significant provisions of the redeemable and convertible preferred stock are as follows:

Liquidation Preferences—In the event of liquidation, dissolution, or winding-up (Liquidation Event), a merger, sale or a change in control (Deemed Liquidation Event), or an IPO of the Company (other

Arcadia Biosciences, Inc.

Notes to Consolidated Financial Statements (Continued)

9. Common Stock and Redeemable and Convertible Preferred Stock (Continued)

than a Qualified IPO, as such term is defined below), each holder of Series D redeemable convertible preferred stock will be entitled to receive an initial liquidation amount of $3.36 per share plus accrued and unpaid dividends, which accrue and compound annually until paid ("Accrued Dividends"), before any payment shall be made, or any assets distributed, with respect to any Series A, Series B, or Series C convertible preferred stock or any common stock. Next, each holder of Series D redeemable convertible preferred stock will be entitled to receive, out of the assets of the Company, a liquidation amount of $3.36 per share and each holder of Series A, Series B, and Series C convertible preferred stock will be entitled to receive, out of the assets of the Company, a liquidation amount of $1.00 per share and, except that in the case of an IPO other than a Qualified IPO, only the holders of Series D redeemable convertible preferred stock will receive a liquidation amount. Finally, holders of common stock will receive a ratable potion of any assets remaining following the liquidation payments to holders of preferred stock described above.

If, under the initial liquidation allocation described above, there is a shortfall in the amount to be paid to the holders of the Series D redeemable convertible preferred stock, then all assets of the Company will be distributed on a pro rata basis among all of the outstanding shares of Series D redeemable convertible preferred stock. If, under the subsequent liquidation allocation described above, there is a shortfall in the amount to be paid to the holders of preferred stock, then all assets of the Company will be distributed on a pro rata basis among all of the outstanding shares of preferred stock. A "Qualified IPO" is an IPO that meets certain requirements as to the Company's pre-money valuation, percentage of the Company capital stock that is sold in the offering, and the gross proceeds from the offering to the Company.

In the event of a Qualified IPO, each holder of Series D redeemable convertible preferred stock will be entitled to receive Accrued Dividends in the form of, at the Company's election, a cash payment or shares of common stock.

Voting Rights—All holders of preferred stock and common stock shall have the right to one vote on all matters concerning stockholders, including, but not limited to, the right to vote for members of the board of directors.

Conversion Rights—The holders of preferred stock are subject to certain optional and mandatory conversion rights. (i) Optional Conversion Rights: Each share of Series A, Series B and Series C convertible preferred stock shall be convertible into common stock at any time at the option of the holder thereof. Such conversion will be on a share-for-share basis, one fully paid and non-assessable share of common stock for each share of preferred stock. Each share of Series D redeemable convertible preferred stock shall be convertible into common stock at any time at the option of the holder subject to certain adjustments to the conversion price based on future issuances of common stock. (ii) Mandatory Conversion Rights: At such time as the Company completes a firm commitment underwritten initial public offering of any class of its common stock pursuant to a registration statement filed subject to the Securities Act of 1933, each share of the Series A, Series B and Series C convertible preferred stock, will automatically be converted into common stock on a share-for-share basis. The conversion price for each share of the Series D redeemable convertible preferred stock will be subject to certain adjustments based on the pre-money valuation of the Company at the conclusion of a Qualified IPO, as defined in the agreements.

Arcadia Biosciences, Inc.

Notes to Consolidated Financial Statements (Continued)

9. Common Stock and Redeemable and Convertible Preferred Stock (Continued)

Subscription Rights—In the event that the Company issues new shares of stock to any party, the holders of preferred stock and certain holders of common stock carry the right to purchase additional shares of any such future stock issuance such that their existing ownership allocation remains intact. Any additional shares purchased by the existing stockholders would be at the same price as any other stockholders at that time. This right will not apply to shares of the Company's common stock issued in connection with the IPO and will terminate upon the consummation of the IPO.

Dividends—The holders of record of shares of Series D redeemable convertible preferred stock are entitled to a 15% dividend that accrues annually until the five-year anniversary of the issuance date and a 20% dividend that accrues annually thereafter. Such dividends on the Series D redeemable convertible preferred stock are payable upon a liquidation event, an IPO of the Company, in the case of a redemption of the Series D redeemable convertible preferred stock, or if declared by the board of directors, at its discretion. Cumulative dividends (undeclared and unpaid) totaled $2.2 million ($0.27 per share) as of September 30, 2014. The Series A, Series B, and Series C convertible preferred stockholders are not entitled to receive dividends, except as the board of directors may declare in its discretion, provided that upon such declaration, each share of preferred stock outstanding shall receive a dividend at least equal, per share, to any cash dividend paid to any holders of common stock. In the event of a declaration of dividends by the board of directors, the Company's note holders have rights restricting the payment until the note holders are paid in full.

Redemption—The Series D redeemable convertible preferred stock shall be redeemed at the option of the holders at any time on or after the eight-year anniversary or at the option of the Company, at any time on or after the four-year anniversary. The redemption amount shall be the greater of (i) two times the original issue price of the Series D redeemable convertible preferred stock plus accrued and unpaid dividends through the redemption date, or (ii) the fair market value of the Series D redeemable convertible preferred stock.

10. Stock-Based Compensation

2006 Stock Incentive Plan

In 2006, the Company authorized the 2006 Stock Plan ("2006 Plan"), which provides for the granting of stock options to executives, employees, and other service providers. The 2006 Plan was adopted on May 2, 2006, with an effective date of January 1, 2006, and, as amended, provides for 18,000,000 shares to be authorized under the Plan. The options typically vest over a four-year service period and have a contractual period of 10 years. Unvested options automatically become exercisable if the Company undertakes an initial public offering or other changes in control, as defined in the option agreements.

Arcadia Biosciences, Inc.

Notes to Consolidated Financial Statements (Continued)

10. Stock-Based Compensation (Continued)

A summary of activity under the Plan is as follows (in thousands, except exercise price and remaining contractual life data):

		Options Issued and Outstanding			
	Share Available for Grant	Shares Underlying Options	Weighted-Average Exercise Price	Aggregate Intrinsic Value	Weighted Average Remaining Contractual Term (in years)
Outstanding—January 1, 2012	35,609	14,161,520	$ 0.58		
Shares authorized for grant	3,000,000				
Granted	(749,800)	749,800	3.39		
Exercised	—	(9,313)	0.42		
Cancelled	35,187	(35,187)	1.79		
Outstanding—December 31, 2012	2,320,996	14,866,820	$ 0.72	$ 39,651	6.01
Granted	—	—	—		
Exercised	—	(38,500)	0.45		
Cancelled	97,050	(97,050)	1.41		
Outstanding—December 31, 2013	2,418,046	14,731,270	$ 0.72	$ 39,346	5.00
Granted (unaudited)	—	—	—		
Exercised (unaudited)	—	(39,375)	0.14		
Cancelled (unaudited)	120,013	(120,012)	0.85		
Outstanding—September 30, 2014 (unaudited)	2,538,059	14,571,883	$ 0.72	$ 15,088	4.26
Options vested and exercisable—December 31, 2013		14,102,270	$ 0.60	$ 39,346	4.86
Options vested and expected to vest—December 31, 2013		14,706,110	$ 0.71	$ 39,346	5.00
Options vested and exercisable—September 30, 2014 (unaudited)		14,281,689	$ 0.67	$ 15,088	4.18
Options vested and expected to vest—September 30, 2014 (unaudited)		14,672,446	$ 0.72	$ 15,213	4.25

Aggregate intrinsic value represents the difference between the exercise price of the options and the estimated fair value of the Company's common stock determined by the board of directors for each of the respective periods. The intrinsic value of options exercised was $28,000 and $113,000 for the years ended December 31, 2012 and 2013, respectively, and $55,000 (unaudited) for the nine months ended September 30, 2014.

Arcadia Biosciences, Inc.

Notes to Consolidated Financial Statements (Continued)

10. Stock-Based Compensation (Continued)

The estimated grant date fair value of options vested was $1.2 million and $1.3 million during the years ended December 31, 2012 and 2013, respectively, and $1.0 million (unaudited) and $595,000 (unaudited) for the nine months ended September 30, 2013 and 2014, respectively.

As of December 31, 2013 and September 30, 2014, there was $1.1 million and $536,000 (unaudited) of unrecognized compensation cost related to unvested stock-based compensation grants that will be recognized over the weighted-average remaining recognition period of 1.6 and 0.5 (unaudited) years, respectively.

In determining the fair value of the stock-based awards, the Company uses the Black-Scholes option-pricing model and assumptions discussed below. Each of these inputs is subjective and generally requires significant judgment to determine.

Expected Term—The expected term is the estimated period of time outstanding for stock options granted and was estimated based on historical, as well as anticipated future, exercise activity.

Expected Volatility—Since the Company is privately held and does not have any trading history for its common stock, the expected volatility was estimated based on the average volatility for comparable publicly traded biotechnology companies over a period equal to the expected term of the stock option grants. When selecting comparable publicly traded biotechnology companies on which it has based its expected stock price volatility, the Company selected companies with comparable characteristics to it, including enterprise value, risk profiles, position within the industry, and with historical share price information sufficient to meet the expected life of the stock-based awards. The historical volatility data was computed using the daily closing prices for the selected companies' shares during the equivalent period of the calculated expected term of the stock-based awards. The Company will continue to apply this process until a sufficient amount of historical information regarding the volatility of its own stock price becomes available.

Risk-Free Interest Rate—The risk-free interest rate is based on the interest rate of U.S. Treasuries of comparable maturities on the date the options were granted.

Expected Dividend—The expected dividend yield is based on the Company's expectation of future dividend payouts to common stockholders.

The fair value of stock option awards to employees was estimated at the date of grant using a Black-Scholes option-pricing model with the following weighted-average assumption:

	Year Ended December 31,		Nine Months Ended September 30,	
Assumptions	2012	2013	2013	2014
			(unaudited)	
Expected term (years)	4.0	—	—	—
Expected volatility	70.0%	—	—	—
Risk-free interest rate	0.54%	—	—	—
Expected dividend yield	—%	—	—	—

The weighted-average, estimated grant-date fair value of employee stock options granted during the year ended December 31, 2012 was $1.90. No employee stock options were granted during the year ended December 31, 2013 or during the nine months ended September 30, 2014 (unaudited). The

Arcadia Biosciences, Inc.

Notes to Consolidated Financial Statements (Continued)

10. Stock-Based Compensation (Continued)

Company recorded expenses related to stock options to nonemployees of $26,000, $227,000, $216,000 (unaudited), and $2,000 (unaudited) for the years ended December 31, 2012 and 2013 and for the nine months ended September 30, 2013 and 2014, respectively.

11. Retirement Benefits

The Company has a 401(k) retirement plan (the "Plan") available for participation by all regular full-time employees who have completed three months of service with the Company. The Company established the Plan in 2008. The Plan provides for a discretionary matching contribution equal to 50% of the amount of the employee's salary deduction, not to exceed 3% of the salary per employee. Highly compensated employees are excluded from receiving any discretionary matching contribution. Employees' rights to employer contributions vest on the one-year anniversary of their date of employment. The Company has the option to make discretionary matching contributions. The Company did not make discretionary matching contributions during the years ended December 31, 2012 or 2013 or the nine months ended September 30, 2014.

12. Income Taxes

The components of loss before income taxes are as follows:

	Year Ended December 31,	
	2012	2013
Domestic	$ (12,157)	$ (13,028)
Foreign	—	—
Loss before income taxes	$ (12,157)	$ (13,028)

The components of the provision for income taxes for the years ended December 31, 2012 and 2013 are as follows (in thousands):

	Year Ended December 31,	
	2012	2013
Current:		
Federal	$ —	$ —
State	1	1
Foreign	212	166
Total current tax expense	213	167
Deferred:		
Federal	—	—
State	—	—
Foreign	—	—
Total deferred tax benefit	—	—
Total tax expense	$ 213	$ 167

Arcadia Biosciences, Inc.

Notes to Consolidated Financial Statements (Continued)

12. Income Taxes (Continued)

The Company operates in only one federal jurisdiction, the United States. The following is a reconciliation of the statutory federal income tax rate to the Company's effective tax rate is as follows:

	Year Ended December 31,	
	2012	2013
Expected income tax provision at the federal statutory rate	34.0%	34.0%
State taxes, net of federal benefit	4.8%	4.0%
Change in valuation allowance	(38.5)%	(36.4)%
Nondeductible expenses	(0.3)%	(0.5)%
Withholding taxes	(1.8)%	(1.3)%
Other	—	(1.1)%
Income tax provision	(1.8)%	(1.3)%

The total income tax expense for the nine months ended September 30, 2013 and 2014 was $131,000 (unaudited) and $235,000 (unaudited) and is comprised of current, foreign taxes withheld by governmental agencies outside of the United States.

Deferred income taxes reflect the net tax effects of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for income tax purposes, net operating loss carryforwards, and other tax credits. Significant components of the Company's deferred tax assets are as follows (in thousands):

	As of December 31,	
	2012	2013
Deferred tax assets:		
Net operating loss carryforwards	$ 26,161	$ 30,496
Unearned revenue	2,305	2,122
Stock-based compensation	1,007	1,451
Accrued payroll and benefits	173	228
Derivative instrument	—	465
Fixed asset basis difference	165	177
Charitable contributions	6	7
Total deferred tax assets	29,817	34,946
Deferred tax liabilities:		
Convertible note discount	—	(556)
Joint venture basis difference	(134)	(75)
Less valuation allowance	(29,683)	(34,315)
Net deferred tax assets	$ —	$ —

Realization of the deferred tax assets is dependent upon future taxable income, if any, the amount and timing of which are uncertain. Accordingly, a portion of the net deferred tax assets has been offset by a valuation allowance. The net valuation allowance increased by $5.2 million and $4.6 million during the years ended December 31, 2012 and 2013, respectively.

Arcadia Biosciences, Inc.

Notes to Consolidated Financial Statements (Continued)

12. Income Taxes (Continued)

The Company evaluates its NOLs on an ongoing basis to determine if they may be limited by Internal Revenue Code (IRC) Section 382. At December 31, 2013, the Company had federal and state NOL carryforwards aggregating approximately $77.6 million and $72.0 million, respectively. These federal and state net operating loss carryforwards will begin to expire in 2020 and 2014, respectively, if not utilized. The Company had federal NOL carryforwards of $11.6 million at December 31, 2013 that were originally generated by Anawah, which are subject to limitations set forth in Section 382 of the Internal Revenue Code. Of the $11.6 million generated, only $4.4 million is available to be utilized and included in the NOLs being carried forward. All other NOLs may be subject to Section 382 limitations if a change of ownership is deemed to have occurred.

The Company evaluates deferred tax assets, including the benefit from NOLs, to determine if a valuation allowance is required. Such evaluation is based on consideration of all available evidence using a "more likely than not" standard with significant weight being given to evidence that can be objectively verified. This assessment considers, among other matters, the nature, frequency, and severity of current and cumulative losses; forecasts of future profitability; the length of statutory carryforward periods; the Company's experience with operating losses; and tax-planning alternatives. The significant piece of objective negative evidence evaluated was the cumulative loss incurred over the three-year periods ended December 31, 2013 and September 30, 2014. Given this evidence and the expectation to incur operating losses in the foreseeable future, a full valuation allowance has been recorded against the deferred tax assets. The Company will continue to maintain a full valuation allowance against the entire amount of its remaining net deferred tax assets, until such time as the Company has determined that the weight of the objectively verifiable positive evidence exceeds that of the negative evidence and it is likely that the Company will be able to utilize all of its net deferred tax assets relating to its federal and state NOL carryforwards. Although the Company has established a full valuation allowance on its deferred tax assets, it has not forfeited the right to carryforward tax losses up to 20 years and apply such tax losses against taxable income in such years, thereby reducing its future tax obligations. The Company is subject to taxation in the United States and various state jurisdictions. As of December 31, 2013, the Company's tax years for 2003 through 2013 are generally subject to examination by the tax authorities.

On January 1, 2009, the Company adopted the provisions of ASC 740 related to accounting for uncertain tax positions and concluded there were no such positions associated with the Company requiring accrual of a liability. As of December 31, 2013, the Company has not accrued for any such positions. We are currently not under audit for federal or state purposes. We do not expect a significant change to occur within the next 12 months.

13. Net Loss per Share and Unaudited Pro Forma Net Loss per Share

Basic net loss per share is calculated by dividing net loss attributable to common stockholders by the weighted-average number of common shares outstanding during the period and excludes any dilutive effects of stock-based awards and warrants. Diluted net loss per share attributable to common stockholders is computed giving effect to all potentially dilutive common shares, including common stock issuable upon exercise of stock options and warrants and conversion of convertible promissory notes, redeemable convertible preferred stock and convertible preferred stock. As the Company had net losses for the years ended December 31, 2012 and 2013 and the nine months ended September 30, 2013 and 2014, all potentially dilutive common shares were determined to be anti-dilutive.

Arcadia Biosciences, Inc.

Notes to Consolidated Financial Statements (Continued)

13. Net Loss per Share and Unaudited Pro Forma Net Loss per Share (Continued)

The following table sets forth the computation of net loss per share attributable to common stockholders (in thousands, except share and per share amounts):

	Year Ended December 31,		Nine Months Ended September 30,	
	2012	2013	2013	2014
			(unaudited)	
Numerator:				
Net loss attributable to common stockholders	$ (12,370)	$ (13,195)	$ (10,322)	$ (18,439)
Denominator:				
Weighted-average number of shares used in per share calculations, basic and diluted	8,181,273	8,213,544	8,209,267	8,233,307
Net loss per share attributable to common stockholders, basic and diluted	$ (1.51)	$ (1.61)	$ (1.26)	$ (2.24)

Potentially dilutive securities that were not included in the diluted per share calculations because they would be anti-dilutive were as follows:

	Year Ended December 31,		Nine Months Ended September 30,	
	2012	2013	2013	2014
			(unaudited)	
Convertible preferred stock	93,540,163	93,540,163	93,540,163	93,540,163
Redeemable convertible preferred stock	—	—	—	9,822,283
Options to purchase common stock	14,866,820	14,731,270	14,734,270	14,571,883
Warrants to purchase common stock	—	302,665	—	5,347,591
Convertible notes	—	1,215,572	—	1,216,433
Total	108,406,983	109,789,670	108,274,433	124,498,353

The Company has presented unaudited pro forma basic and diluted net loss per share attributable to common stockholders, which has been computed to give effect to the conversion of all shares of redeemable convertible preferred stock and convertible preferred stock into shares of common stock as if such conversion had occurred as of the beginning of the period presented. The following table sets

Arcadia Biosciences, Inc.

Notes to Consolidated Financial Statements (Continued)

13. Net Loss per Share and Unaudited Pro Forma Net Loss per Share (Continued)

forth the computation of the Company's pro forma basic and diluted net loss per share attributable to common stockholders (in thousands, except per share amounts):

	Year Ended December 31, 2013	Nine Months Ended September 30, 2014
		(unaudited)
Net loss attributable to common stockholders	$ (13,195)	$ (18,439)
Weighted-average number of shares used in per share calculations, basic and diluted	8,213,544	8,233,307
Pro forma adjustment to reflect assumed conversion of convertible preferred stock	93,540,163	
Weighted-average number of shares used in pro forma per share calculations, basic and diluted	101,753,707	
Pro forma net loss per share attributable to common stockholders, basic and diluted	$ (0.13)	$

14. Segment and Geographic Information

Management has determined that it has one business activity and operates in one segment as it only reports financial information on an aggregate and consolidated basis to its Chief Executive Officer, who is the Company's chief operating decision maker.

Revenues based on the location of the customers, are as follows (in percentages):

	Year Ended December 31,		Nine Months Ended September 30,	
	2012	2013	2013	2014
			(unaudited)	
United States	32%	64%	71%	79%
India	34%	24%	13%	14%
Canada	16%	0%	1%	0%
Africa	10%	7%	8%	—%
Belgium	5%	2%	1%	2%
France	3%	2%	1%	2%
Other	0%	1%	5%	3%
Total	100%	100%	100%	100%

15. Related-Party Transactions

Our related parties include MCC and Blue Horse Labs, Inc. ("BHL"), and Limagrain. BHL is deemed a related party as a result of its existing contractual relationship with the Company and that a Director of the Company also serves as the Treasurer of BHL and as an Officer and Director of MCC, the Company's controlling stockholder.

Arcadia Biosciences, Inc.

Notes to Consolidated Financial Statements (Continued)

15. Related-Party Transactions (Continued)

Transactions with related parties are reflected in the consolidated financial statements under amounts due to or from related parties and notes payable to related party. Outlined below are details of agreements between the Company and its related parties:

A term note was executed with MCC in July 2012 for $8.0 million (see Note 7). The principal balance is included in the December 31, 2012 and 2013 and September 30, 2014 balance sheets as notes payable to related party and the related accrued interest is included in amounts due to related parties. An additional term note was executed with MCC in July 2013 for $500,000. The principal balance and $19,000 of interest was repaid in December 2013.

Under a license agreement executed in 2003 and amended in 2009, BHL receives a single-digit royalty from the Company when revenue has been collected for certain intellectual property such as GLA, NUE monocot among others that has been licensed to third parties. Royalty fees due to BHL were $121,000, $161,000 and $11,000 (unaudited) as of December 31, 2012 and 2013, and September 30, 2014, respectively, and are included in the balance sheets as amounts due to related parties.

License agreements were executed with Limagrain, a stockholder of the Company, in September 2009 and February 2011. The agreements license certain of the Company's traits to Limagrain and include up-front license fees, annual license fees, milestone fees and value-sharing payments. The Company recognized $206,000 and $144,000 of revenue under these agreements in the years ended December 31, 2012 and 2013, respectively and $33,000 (unaudited) and $68,000 (unaudited) for the nine months ended September 30, 2013 and 2014, respectively. The amounts due from Limagrain were $100,000, $100,000 and $0 as of December 31, 2012 and 2013 and September 30, 2014, respectively.

In addition to the investment in LCS as described in Note 4, Limagrain purchased 7,375,552 shares of the Company's common stock in April 2010 and owns 7% of the Company on an as-converted basis as of September 30, 2014.

16. Subsequent Events

In connection with the issuance of the consolidated financial statements for the years ended December 31, 2012 and 2013, the Company has evaluated subsequent events through November 12, 2014, the date the consolidated financial statements were issued.

In September 2014, the Company and Bioceres, S.A. entered into an agreement to reduce the annual commitment for 2014 to $500,000 from the original $2.0 million and to eliminate the 2015 commitment amount of $1.2 million. In consideration for these amendments, the Company surrendered 1,832 shares of Bioceres, S.A. held by the Company.

In October 2014, the Company's board of directors approved the grant of options to purchase an aggregate of 500,000 shares of common stock with an exercise price of $1.53 per share to employees. Subject to continuing employment, 50% of the shares under each option will be fully vested and exercisable on February 7, 2015 and the remaining 50% of the shares under each option will vest and become exercisable in 24 equal monthly installments following the initial vesting date.

On November 10, 2014, the Company and MCC entered into an amendment to the $8.0 million term loan under which the maturity date is amended to the first to occur of the following dates: (i) April 1, 2016, (ii) the date of an Event of Default, or (iii) a date designated by MCC, by notice to

Arcadia Biosciences, Inc.

Notes to Consolidated Financial Statements (Continued)

16. Subsequent Events (Continued)

the Company, no earlier than the 20th day following consummation by the Company of an equity financing with gross proceeds to the Company of at least $50 million. In addition, the interest rate remains at prime plus 2% through December 31, 2014, and was amended to be 11% per annum thereafter until maturity.

17. Subsequent Events (unaudited)

In connection with the issuance of the interim financial statements for the nine months ended September 30, 2013 and 2014, the Company has evaluated subsequent events through December 19, 2014, the date the consolidated financial statements were issued.

Important Global Crops

Arcadia BIOSCIENCES

According to the Food & Agriculture Organization of the United Nations, the six crops listed below accounted for more than $1 trillion/year in global farm revenues as of 2012.*

WHEAT

LEADERS BY HARVEST AREA:

EUROPE
INDIA
CHINA
RUSSIA

CORN

LEADERS BY HARVEST AREA:

CHINA
US
AFRICA
EUROPE

RICE

LEADERS BY HARVEST AREA:

INDIA
CHINA
INDONESIA
AFRICA

SOYBEAN

LEADERS BY HARVEST AREA:

US
BRAZIL
ARGENTINA
INDIA

COTTON

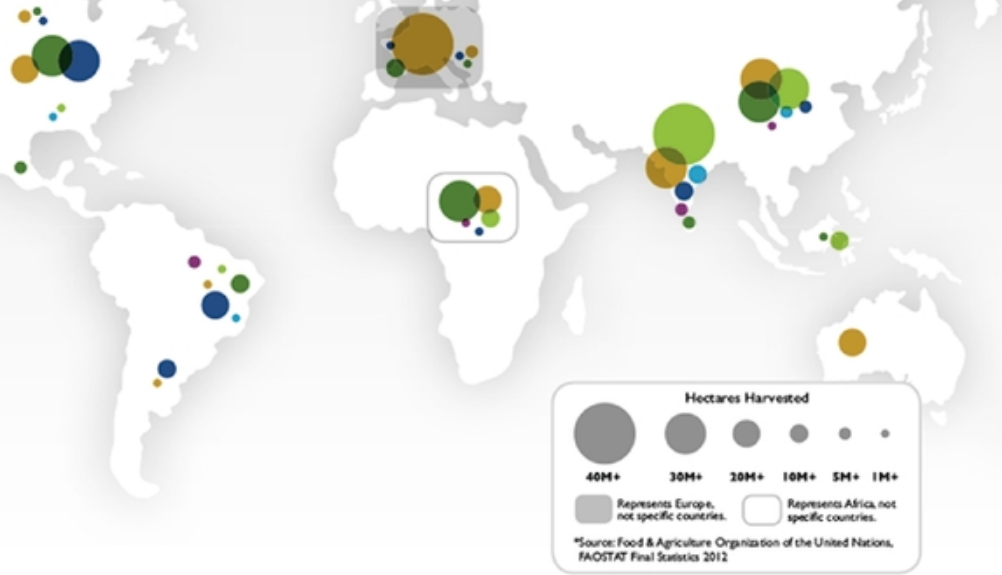
LEADERS BY HARVEST AREA:

INDIA
CHINA
US
BRAZIL

SUGARCANE

LEADERS BY HARVEST AREA:

BRAZIL
INDIA
CHINA
AFRICA



*Source: Food & Agriculture Organization of the United Nations, FAOSTAT Final Statistics 2012


Arcadia
BIOSCIENCES

PART II

INFORMATION NOT REQUIRED IN PROSPECTUS

Item 13. Other Expenses of Issuance and Distribution

The following table sets forth the costs and expenses, other than underwriting discounts and commissions, payable by us in connection with the sale of common stock being registered. All amounts are estimates except the SEC registration fee, FINRA filing fee and The NASDAQ Global Market listing fee.

	Amount to be Paid
SEC registration fee	$ 10,023
FINRA filing fee	13,438
The NASDAQ Global Market listing fee	125,000
Printing and engraving expenses	*
Legal fees and expenses	*
Accounting fees and expenses	*
Blue Sky qualification fees and expenses	*
Transfer Agent and Registrar fees	*
Miscellaneous fees and expenses	*
Total	*

* To be filed by amendment.

Item 14. Indemnification of Directors and Officers

On completion of this offering, the Registrant's amended and restated certificate of incorporation will contain provisions that eliminate, to the maximum extent permitted by the General Corporation Law of the State of Delaware, the personal liability of the Registrant's directors and executive officers for monetary damages for breach of their fiduciary duties as directors or officers. The Registrant's amended and restated certificate of incorporation and bylaws will provide that the Registrant must indemnify its directors and executive officers and may indemnify its employees and other agents to the fullest extent permitted by the General Corporation Law of the State of Delaware.

Sections 145 and 102(b)(7) of the General Corporation Law of the State of Delaware provide that a corporation may indemnify any person made a party to an action by reason of the fact that he or she was a director, executive officer, employee or agent of the corporation or is or was serving at the request of a corporation against expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by him or her in connection with such action if he or she acted in good faith and in a manner he or she reasonably believed to be in, or not opposed to, the best interests of the corporation and, with respect to any criminal action or proceeding, had no reasonable cause to believe his or her conduct was unlawful, except that, in the case of an action by or in right of the corporation, no indemnification may generally be made in respect of any claim as to which such person is adjudged to be liable to the corporation.

The Registrant has entered into indemnification agreements with its directors and executive officers, in addition to the indemnification provided for in its amended and restated certificate of incorporation and bylaws, and intends to enter into indemnification agreements with any new directors and executive officers in the future.

The Registrant has purchased and intends to maintain insurance on behalf of each and any person who is or was a director or officer of the Registrant against any loss arising from any claim asserted against him or her and incurred by him or her in any such capacity, subject to certain exclusions.

The Underwriting Agreement (Exhibit 1.1 hereto) provides for indemnification by the underwriters of the Registrant and its executive officers and directors, and by the Registrant of the underwriters, for certain liabilities, including liabilities arising under the Securities Act.

Item 15. Recent Sales of Unregistered Securities

During the last three years, the Registrant sold the following unregistered securities:

Series D Preferred Stock Issuances

From March 2014 through May 2014, the Registrant sold to accredited investors in a series of closings an aggregate of 9,822,283 shares of our Series D preferred stock at a per share price of $3.36, for aggregate consideration of approximately $33.0 million.

In connection with the Series D preferred stock financing, from March 2014 through May 2014, the Registrant issued to accredited investors warrants to purchase an aggregate of 4,911,145 shares of its common stock at an exercise price of $4.54 per share.

In connection with the Series D preferred stock financing, from March 2014 through May 2014, the Registrant issued to its placement agent, an accredited investor, warrants to purchase 133,781 shares of its common stock at an exercise price of $3.36 per share as partial consideration for their services.

Convertible Notes and Warrant Issuances

From September 2013 through December 2013, the Registrant issued convertible notes to an accredited investor in the principal amount of $5.0 million.

In December 2013, the Registrant issued to an accredited investor a warrant to purchase 302,665 shares of its common stock at an exercise price of $4.13 per share.

2006 Stock Plan-Related Issuances

During the last three years, the Registrant granted its directors, employees, consultants and other service providers options to purchase an aggregate of 2,194,400 shares of common stock under its 2006 Stock Plan at exercise prices ranging from $1.53 to $3.39 per share. Of these, options to purchase 117,708 shares of the Registrant's common stock have been exercised to date for aggregate consideration of $37,819, at exercise prices ranging from $0.11 to $3.39 per share.

A placement agent was used in connection with the Series D preferred stock financing described above. Otherwise, no underwriters were involved in the foregoing sales of securities. The issuances of the securities described above were deemed to be exempt from registration under the Securities Act in reliance on Section 4(a)(2) of the Securities Act, or Regulation D promulgated thereunder, as transactions by an issuer not involving a public offering, or Regulation S of the Securities Act or Rule 701 promulgated under 3(b) of the Securities Act as transactions pursuant to compensation benefits plans and contracts relating to compensation.

Item 16. Exhibits and Financial Statement Schedules

(a) Exhibits

Number	Description
1.1*	Form of Underwriting Agreement.
3.1	Amended and Restated Articles of Incorporation of the Registrant, as currently in effect.
3.2*	Form of Amended and Restated Certificate of Incorporation of the Registrant, to be in effect upon the completion of this offering.
3.3	Bylaws of the Registrant, as currently in effect.

Number	Description
3.4*	Form of Amended and Restated Bylaws of the Registrant, to be in effect upon the completion of this offering.
4.1*	Form of common stock certificate of the Registrant.
4.2	Investors' Rights Agreement dated March 28, 2014 among the Registrant and certain holders of its capital stock.
4.3	Amended and Restated Investors' Rights Agreement dated April 30, 2010 among the Registrant and certain holders of its capital stock.
4.4	Note and Warrant Purchase Agreement dated September 27, 2013 between the Registrant and Mahyco International Pte Ltd.
4.5	Convertible Promissory Note dated September 30, 2013 between the Registrant and Mahyco International Pte Ltd.
4.6	Convertible Promissory Note dated December 11, 2013 between the Registrant and Mahyco International Pte Ltd.
4.7	Stock Purchase Warrant dated December 11, 2013 between the Registrant and Mahyco International Pte Ltd.
4.8	Form of Common Stock Purchase Warrant between the Registrant and Certain Purchasers of its Series D Preferred Stock.
5.1*	Opinion of Orrick, Herrington & Sutcliffe LLP.
10.1†	License Agreement dated October 2, 2006 between the Registrant and The Governers of the University of Alberta.
10.2†	Intellectual Property License Agreement dated January 1, 2003 between the Registrant and Blue Horse Labs, Inc.
10.3†	Exclusive License Agreement for Drought-Resistant Plants dated July 2, 2010 between the Registrant and The Regents of the University of California.
10.4†	License Agreement dated February 14, 2002 between the Registrant and The University of Toronto Innovations Foundation.
10.5†	Amended and Restated License Agreement dated July 25, 2007 between the Registrant and Ross Products Division of Abbott Laboratories.
10.6†	Collaborative Research and Development Agreement dated July 31, 2009 between the Registrant and Maharashtra Hybrid Seeds Co. Ltd.
10.7	Form of Indemnification Agreement between the Registrant and each of its Officers and Directors.
10.8	2006 Stock Plan, as amended and restated, and form of agreement thereunder.
10.9	2015 Omnibus Equity Incentive Plan and forms of agreement thereunder.
10.10	2015 Employee Stock Purchase Plan and form of agreement thereunder.
10.11	Term Loan Agreement dated July 23, 2012 between the Registrant and Moral Compass Corporation, as amended.
10.12	Office Lease dated March 17, 2003 between the Registrant and Buzz Oates LLC as successor to Marvin L. Oates, Trustee of the Marvin L. Oates Trust, as amended.
10.13†	Cooperative Agreement dated September 30, 2008 between the Registrant and the United States Agency for International Development, as amended.

Number	Description
10.14†	Cooperative Agreement dated October 11, 2012 between the Registrant and the United States Agency for International Development, as amended.
10.15	Executive Incentive Bonus Plan.
10.16	Director Compensation Policy.
10.17*	Offer Letter, dated , between the Registrant and Eric J. Rey.
10.18*	Offer Letter, dated February 22, 2005, between the Registrant and Vic C. Knauf, as amended.
10.19*	Offer Letter, dated September 24, 2008, between the Registrant and Wendy S. Neal, as amended.
10.20*	Form of Severance and Change in Control Agreement.
21.1	List of Subsidiaries.
23.1	Consent of Deloitte & Touche LLP.
23.2*	Consent of Orrick, Herrington & Sutcliffe LLP (included in Exhibit 5.1).
24.1	Power of Attorney (see page II-5 of this Registration Statement).
99.1	Consent of Phillips McDougall.

* To be filed by amendment.

† Confidential treatment has been requested with respect to certain portions of this exhibit. Omitted portions have been filed separately with the Securities and Exchange Commission.

(b) Financial Statement Schedules

Schedules not listed above have been omitted because the information required to be set forth therein is not applicable or is shown in the financial statements or notes thereto.

Item 17. Undertakings

The undersigned registrant hereby undertakes to provide to the underwriters at the closing specified in the underwriting agreements certificates in such denominations and registered in such names as required by the underwriters to permit prompt delivery to each purchaser.

Insofar as indemnification for liabilities arising under the Securities Act of 1933 may be permitted to directors, officers and controlling persons of the registrant pursuant to the foregoing provisions, or otherwise, the registrant has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Act, and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer, or controlling person of the registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Act and will be governed by the final adjudication of such issue.

The undersigned registrant hereby undertakes that:

(1) For purposes of determining any liability under the Securities Act, the information omitted from the form of prospectus filed as part of this registration statement in reliance upon Rule 430A and contained in a form of prospectus filed by the registrant pursuant to Rule 424(b)(1) or (4) or 497(h) under the Securities Act shall be deemed to be part of this registration statement as of the time it was declared effective.

(2) For the purpose of determining any liability under the Securities Act, each post-effective amendment that contains a form of prospectus shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the registrant has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the city of Davis, State of California on February 17, 2015.

ARCADIA BIOSCIENCES, INC.

By: /s/ ERIC J. REY

Eric J. Rey
President, Chief Executive Officer and Director

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below hereby constitutes and appoints, jointly and severally, Eric J. Rey, Steven F. Brandwein and Wendy S. Neal, and each of them, as his attorney-in-fact, with full power of substitution, for him in any and all capacities, to sign any and all amendments to this Registration Statement (including post effective amendments), and any and all Registration Statements filed pursuant to Rule 462 under the Securities Act of 1933, as amended, in connection with or related to the offering contemplated by this Registration Statement and its amendments, if any, and to file the same, with exhibits thereto and other documents in connection therewith, with the Securities and Exchange Commission, hereby ratifying and confirming our signatures as they may be signed by our said attorney to any and all amendments to said Registration Statement.

Pursuant to the requirements of the Securities Act of 1933, this Registration Statement has been signed by the following persons in the capacities and on the dates indicated:

Signature	Title	Date
/s/ ERIC J. REY Eric J. Rey	President, Chief Executive Officer and Director (Principal Executive Officer)	February 17, 2015
/s/ STEVEN F. BRANDWEIN Steven F. Brandwein	Vice President, Finance and Administration (Principal Financial Officer and Principal Accounting Officer)	February 17, 2015
/s/ PETER GAJDOS Peter Gajdos	Director	February 17, 2015
/s/ DARBY E. SHUPP Darby E. Shupp	Director	February 17, 2015

Signature	Title	Date
/s/ UDAY GARG Uday Garg	Director	February 17, 2015
/s/ JAMES R. REIS James R. Reis	Director	February 17, 2015
/s/ MARK W. WONG Mark W. Wong	Director	February 17, 2015

EXHIBIT INDEX

Number	Description
1.1*	Form of Underwriting Agreement.
3.1	Amended and Restated Articles of Incorporation of the Registrant, as currently in effect.
3.2*	Form of Amended and Restated Certificate of Incorporation of the Registrant, to be in effect upon the completion of this offering.
3.3	Bylaws of the Registrant, as currently in effect.
3.4*	Form of Amended and Restated Bylaws of the Registrant, to be in effect upon the completion of this offering.
4.1*	Form of common stock certificate of the Registrant.
4.2	Investors' Rights Agreement dated March 28, 2014 among the Registrant and certain holders of its capital stock.
4.3	Amended and Restated Investors' Rights Agreement dated April 30, 2010 among the Registrant and certain holders of its capital stock.
4.4	Note and Warrant Purchase Agreement dated September 27, 2013 between the Registrant and Mahyco International Pte Ltd.
4.5	Convertible Promissory Note dated September 30, 2013 between the Registrant and Mahyco International Pte Ltd.
4.6	Convertible Promissory Note dated December 11, 2013 between the Registrant and Mahyco International Pte Ltd.
4.7	Stock Purchase Warrant dated December 11, 2013 between the Registrant and Mahyco International Pte Ltd.
4.8	Form of Common Stock Purchase Warrant between the Registrant and Certain Purchasers of its Series D Preferred Stock.
5.1*	Opinion of Orrick, Herrington & Sutcliffe LLP.
10.1†	License Agreement dated October 2, 2006 between the Registrant and The Governers of the University of Alberta.
10.2†	Intellectual Property License Agreement dated January 1, 2003 between the Registrant and Blue Horse Labs, Inc.
10.3†	Exclusive License Agreement for Drought-Resistant Plants dated July 2, 2010 between the Registrant and The Regents of the University of California.
10.4†	License Agreement dated February 14, 2002 between the Registrant and The University of Toronto Innovations Foundation.
10.5†	Amended and Restated License Agreement dated July 25, 2007 between the Registrant and Ross Products Division of Abbott Laboratories.
10.6†	Collaborative Research and Development Agreement dated July 31, 2009 between the Registrant and Maharashtra Hybrid Seeds Co. Ltd.
10.7	Form of Indemnification Agreement between the Registrant and each of its Officers and Directors.
10.8	2006 Stock Plan, as amended and restated, and form of agreement thereunder.
10.9	2015 Omnibus Equity Incentive Plan and forms of agreement thereunder.
10.10	2015 Employee Stock Purchase Plan and form of agreement thereunder.
10.11	Term Loan Agreement dated July 23, 2012 between the Registrant and Moral Compass Corporation, as amended.

Number	Description
10.12	Office Lease dated March 17, 2003 between the Registrant and Buzz Oates LLC as successor to Marvin L. Oates, Trustee of the Marvin L. Oates Trust, as amended.
10.13†	Cooperative Agreement dated September 30, 2008 between the Registrant and the United States Agency for International Development, as amended.
10.14†	Cooperative Agreement dated October 11, 2012 between the Registrant and the United States Agency for International Development, as amended.
10.15	Executive Incentive Bonus Plan.
10.16	Director Compensation Policy.
10.17*	Offer Letter, dated , between the Registrant and Eric J. Rey.
10.18*	Offer Letter, dated February 2, 2005, between the Registrant and Vic C. Knauf, as amended.
10.19*	Offer Letter, dated September 24, 2008, between the Registrant and Wendy S. Neal, as amended.
10.20*	Form of Severance and Change in Control Agreement.
21.1	List of Subsidiaries.
23.1	Consent of Deloitte & Touche LLP.
23.2*	Consent of Orrick, Herrington & Sutcliffe LLP (included in Exhibit 5.1).
24.1	Power of Attorney (see page II-5 of this Registration Statement).
99.1	Consent of Phillips McDougall.

* To be filed by amendment.

† Confidential treatment has been requested with respect to certain portions of this exhibit. Omitted portions have been filed separately with the Securities and Exchange Commission.

AMENDED AND RESTATED
ARTICLES OF INCORPORATION
OF
ARCADIA BIOSCIENCES, INC.

FIRST: The name of the corporation is Arcadia Biosciences, Inc.

SECOND: Attached hereto as Exhibit A is a copy of the Articles of Incorporation of the corporation fully restated to include all amendments to the Articles of Incorporation through the date of filing of this document (the "**Amended Articles**").

THIRD: The Amended Articles contain amendments to the Articles of Incorporation requiring shareholder approval as to such amendments. The amendments do not provide for an exchange, reclassification or cancellation of issued shares.

FOURTH: The Amended Articles were adopted on March 21, 2014 by the shareholders.

FIFTH: The number of voting groups entitled to vote separately on the Amended Articles, the designation and number of outstanding shares in each voting group entitled to vote separately on the Amended Articles, the number of votes entitled to be cast by each voting group, the number of votes of each such voting group represented at the special meeting at which the Amended Articles were adopted and the votes cast for and against the same were as follows:

There were four voting groups entitled to vote on the Amended Articles. The first voting group (the "**Series C Voting Group**"), consisting of 9,586,346 outstanding shares of Series C Preferred Stock, was entitled to 9,586,346 votes; the second voting group (the "**Series B Voting Group**"), consisting of 16,890,690 outstanding shares of Series B Preferred Stock, was entitled to 16,890,690 votes; the third voting group (the "**Series A Voting Group**"), consisting of 67,063,127 outstanding shares of Series A Preferred Stock, was entitled to 67,063,127 votes; and the fourth voting group (the "**All Shareholders Voting Group**"), consisting of 9,586,346 outstanding shares of Series C Preferred Stock; 16,890,690 outstanding shares of Series B Preferred Stock; 67,063,127 outstanding shares of Series A Preferred Stock; and 8,226,236 outstanding shares of Common Stock, was entitled to 101,766,399 votes. There were 9,371,531 shares of the Series C Voting Group; 16,602,530 shares of the Series B Voting Group; 65,457,877 shares of the Series A Voting Group; and 99,559,827 shares of the All Shareholders Voting Group represented and received at the special meeting of the shareholders. The Series C Voting Group cast 9,371,531 votes for and 0 votes against approval of the Amended Articles; the Series B Voting Group cast 16,602,538 votes for and 0 votes against approval of the Amended Articles; the Series A Voting Group cast 65,457,877 votes for and 0 votes against approval of the Amended Articles; and the All Shareholders Voting Group cast 99,559,827 votes for and 0 votes against approval of the Amended Articles. The number of votes cast by each of the Series C Voting Group, the Series B Voting Group, the Series A Voting Group and the All Shareholders Voting Group for approval of the Amended Articles was sufficient for approval by each voting group.

DATED as of March 21, 2014.

ARCADIA BIOSCIENCES, INC., an Arizona corporation

By: /s/ Steven F. Brandwein
Name: Steven F. Brandwein
Its: Secretary

EXHIBIT A
AMENDED AND RESTATED
ARTICLES OF INCORPORATION
OF ARCADIA BIOSCIENCES, INC.

ARTICLE I
NAME

The name of the Corporation is Arcadia Biosciences, Inc. (the "**Corporation**").

ARTICLE II
PURPOSE

The purposes for which the Corporation is organized include the transaction of any or all lawful business for which corporations may be incorporated under Chapter 1 of Title 10, Arizona Revised Statutes, at any time. The character of business that the Corporation initially intends to conduct is the business of plant genetics research, development and commercialization.

ARTICLE III
CAPITAL STOCK

The total number of shares of all classes of stock that the Corporation shall have authority to issue is (i) 140,000,000 shares of a class designated as Common Stock, no par value ("**Common Stock**"), and (ii) 110,000,000 shares of a class designated as Preferred Stock, no par value ("**Preferred Stock**").

The following is a statement of the designations and the powers, privileges and rights, and the qualifications, limitations or restrictions thereof in respect of each class of capital stock of the Corporation.

A. COMMON STOCK

1. General. The voting, dividend and liquidation rights of the holders of the Common Stock are subject to and qualified by the rights, powers and preferences of the holders of the Preferred Stock set forth herein.

2. Voting. With respect to any matter as to which the holders of Common Stock are entitled to vote, the holder of each share of Common Stock shall be entitled to one (1) vote per share on such matter.

3. Dividends. Subject to the provisions of Article III.B.1, holders of Common Stock shall be entitled to dividends and other distributions of cash, shares of capital stock of the Corporation, other securities of the Corporation or any other company, or any other right or property as may be declared thereon by the Board of Directors of the Corporation (the "**Board**") from time to time out of assets or funds of the Corporation legally available therefor.

4. Liquidation Rights. In the event the Corporation shall be liquidated (either partially or completely), dissolved, or wound up, whether voluntarily or involuntarily, the holders of Common Stock shall be entitled to share ratably in the net assets of the Corporation available to holders of Common Stock, subject to the provisions of Article III.B.2.

5. Preemption and Subscription Rights. Holders of Common Stock are not entitled to any preemption rights except as granted by the Corporation pursuant to written agreements.

B. PREFERRED STOCK

An aggregate 68,000,000 shares of the authorized Preferred Stock of the Corporation are hereby designated Series A Preferred Stock ("**Series A Preferred Stock**"), 17,000,000 shares of the authorized Preferred Stock of the Corporation are hereby designated Series B Preferred Stock ("**Series B Preferred Stock**"), 9,586,346 shares of the authorized Preferred Stock of the Corporation are hereby designated Series C Preferred Stock ("**Series C Preferred Stock**"), and 10,553,770 shares of the authorized and unissued Preferred Stock of the Corporation are hereby designated Series D Preferred Stock ("**Series D Preferred Stock**", and together with the Series A Preferred Stock, Series B Preferred Stock and Series C Preferred Stock, the "**Series Preferred Stock**"), with the following rights, preferences, powers, privileges and restrictions, qualifications and limitations. Unless otherwise indicated, references to "Sections" or "Subsections" in this Part B of this Article III refer to sections and subsections of Part B of this Article III.

1. Dividends.

1.1 From and after the date of the issuance of any share of Series D Preferred Stock, cumulative dividends on such share of Series D Preferred Stock shall accrue (a) at the rate of fifteen percent (15%) *per annum* on the sum of the Series D Original Issue Price (as defined below) plus all unpaid accrued and accumulated dividends thereon, until the five (5) year anniversary of such date of issuance, and (b) at the rate of twenty percent (20%) *per annum* on the sum of the Series D Original Issue Price plus all unpaid accrued and accumulated dividends thereon, from and after the five (5) year anniversary of such date of issuance. All accrued dividends on any share of Series D Preferred Stock shall be paid in cash only when, as and if declared by the Board out of funds legally available therefor or upon a Liquidation Event (as defined below), Deemed Liquidation Event (as defined below), conversion or redemption of the Series D Preferred Stock in accordance with the provisions of these Articles of Incorporation; provided that, to the extent not paid on each anniversary of its issuance date (each such date, a "**Dividend Payment Date**"), all accrued dividends on any share of Series D Preferred Stock shall accumulate and compound on the applicable Dividend Payment Date and shall remain accumulated, compounding dividends at the rates set forth above until paid pursuant to these Articles of Incorporation. The dividends so accruing are referred to herein as the "**Accruing Dividends**". Accruing Dividends shall accrue from day to day, whether or not declared by the Board and whether or not there are funds legally available for the payment of dividends. The Corporation shall not declare, pay or set aside any dividends on shares of any other class or series of capital stock of the Corporation, other than dividends on shares of Common Stock payable in shares of Common Stock, unless (in addition to the obtaining of any consents required elsewhere in these Articles of Incorporation) the holders of the Series D Preferred Stock then

outstanding shall first receive, or simultaneously receive, a dividend on each outstanding share of Series D Preferred Stock in an amount equal to the amount of the aggregate Accruing Dividends then accrued on such share of Series D Preferred Stock and not previously paid.

1.2 The Corporation shall not declare, pay or set aside any dividends on shares of any other class or series of capital stock of the Corporation, other than dividends on shares of Common Stock payable in shares of Common Stock, unless, in addition to complying with Subsection 1.1 and obtaining any consents required elsewhere in these Articles of Incorporation, the Corporation shall first (or concurrently) declare and pay the holders of all Series Preferred Stock then outstanding (including, for avoidance of doubt, the Series D Preferred Stock) a dividend on each outstanding share of Series Preferred Stock in an amount at least equal to (i) in the case of a dividend on Common Stock or any class or series that is convertible into Common Stock, that dividend per share of Series Preferred Stock as would equal the product of (A) the dividend payable on each share of such class or series determined, if applicable, as if all shares of each such class or series had been converted into Common Stock and (B) the number of shares of Common Stock issuable upon conversion of a share of Series A Preferred Stock, Series B Preferred Stock, Series C Preferred Stock, or Series D Preferred Stock, as the case may be, in each case calculated on the record date for determination of holders entitled to receive such dividend or (ii) in the case of a dividend on any class or series that is not convertible into Common Stock, at a rate per share of Series Preferred Stock determined by (A) dividing the amount of the dividend payable on each share of each such class or series of capital stock by the original issuance price of such class or series of capital stock (subject to appropriate adjustment in the event of any stock dividend, stock split, combination or other similar recapitalization with respect to such class or series) and (B) multiplying such fraction by an amount equal to the Series A Original Issue Price, Series B Original Issue Price, Series C Original Issue Price, or Series D Original Issue Price (as such terms are defined below), as applicable; provided that, if the Corporation declares, pays or sets aside, on the same date, a dividend on shares of more than one class or series of capital stock of the Corporation, the dividend payable to the holders of Series A Preferred Stock, Series B Preferred Stock, Series C Preferred Stock, and Series D Preferred Stock pursuant to this Section 1 shall be calculated based upon the dividend on the class or series of capital stock that would result in the highest Series A Preferred Stock, Series B Preferred Stock, Series C Preferred Stock or Series D Preferred Stock dividend, as applicable. The "**Series A Original Issue Price**" shall mean US$0.90 per share, subject to appropriate adjustment in the event of any stock dividend, stock split, combination or other similar recapitalization with respect to the Series A Preferred Stock. The "**Series B Original Issue Price**" shall mean US$0.90 per share, subject to appropriate adjustment in the event of any stock dividend, stock split, combination or other similar recapitalization with respect to the Series B Preferred Stock. The "**Series C Original Issue Price**" shall mean US$1.07 per share, subject to appropriate adjustment in the event of any stock dividend, stock split, combination or other similar recapitalization with respect to the Series C

Preferred Stock. The "**Series D Original Issue Price**" shall mean US$3.3637 per share, subject to appropriate adjustment in the event of any stock dividend, stock split, combination or other similar recapitalization with respect to the Series D Preferred Stock.

2. Liquidation, Dissolution or Winding Up; Certain Mergers, Consolidations, Public Offerings and Asset Sales.

2.1 Payments to Holders of Series D Preferred Stock. In the event of any (i) voluntary or involuntary liquidation, dissolution or winding up of the Corporation (each a "**Liquidation Event**"), (ii) Deemed Liquidation Event, or (iii) IPO (other than a Qualified IPO), the holders of shares of Series D Preferred Stock then outstanding shall be entitled to be paid out of the assets of the Corporation available for distribution to its stockholders, before any payment shall be made to the holders of Series C Preferred Stock, Series B Preferred Stock, Series A Preferred Stock or Common Stock by reason of their ownership thereof, an amount per share equal to (x) the Series D Original Issue Price, plus (y) the aggregate accrued but unpaid Accruing Dividends in respect of each such share, plus (z) any other dividends declared but unpaid thereon. If upon any such Liquidation Event or Deemed Liquidation Event or IPO (other than a Qualified IPO), the assets of the Corporation available for distribution to its stockholders shall be insufficient to pay the holders of shares of Series D Preferred Stock then outstanding the full amount to which they shall be entitled under this Subsection 2.1, the holders of shares of Series D Preferred Stock then outstanding shall share ratably in any distribution of the assets available for distribution in proportion to the respective amounts that would otherwise be payable in respect of the shares held by them upon such distribution if all amounts payable on or with respect to such shares were paid in full.

2.2 Payments to Holders of Series Preferred Stock.

(a) In the event of any (i) Liquidation Event, (ii) Deemed Liquidation Event, or (iii) IPO (other than a Qualified IPO), after payment in full to the holders of Series D Preferred Stock of the amounts due pursuant to Subsection 2.1, the holders of shares of the Series D Preferred Stock then outstanding shall be entitled to be paid out of the assets of the Corporation available for distribution to its stockholders, before any payment shall be made to the holders of Common Stock by reason of their ownership thereof, an amount per share equal to the greater of (x) the Series D Original Issue Price or (y) such amount per share as would have been payable under Section 2.3 below, had all shares of such Series D Preferred Stock then outstanding been converted into Common Stock pursuant to Section 4 immediately prior to such Liquidation Event or Deemed Liquidation Event or IPO (other than a Qualified IPO);

(b) In the event of any Liquidation Event or Deemed Liquidation Event, after payment in full to the holders of Series D Preferred Stock of the amounts due pursuant to Subsection 2.1, the holders of shares of the Series A Preferred Stock, Series B Preferred Stock and Series C Preferred Stock then outstanding shall be entitled to be paid out of the assets of the Corporation available for distribution to its stockholders, before any payment shall be made to the holders of Common Stock by reason of their ownership thereof, an amount per share equal to the greater of (x) with respect to (A) the holder(s) of the Series A Preferred Stock, US$1.00, (B) the holder(s) of the Series B Preferred Stock, US$1.00, and (C) the holder(s) of the Series C Preferred stock, US$1.00, with each such price subject to appropriate adjustment in the event of any stock dividend, stock split, combination or other similar recapitalization with respect to such series of stock, or (y) with respect to each of the Series A Preferred Stock, the Series B Preferred Stock and the Series C Preferred Stock, such amount per share as would have been payable under Section 2.3 below, had all shares of such

Series A Preferred Stock, Series B Preferred Stock and Series C Preferred Stock then outstanding been converted into Common Stock pursuant to Section 4 immediately prior to such Liquidation Event or Deemed Liquidation Event;

(c) Provided, however, notwithstanding the foregoing, if upon any such Liquidation Event or Deemed Liquidation Event, the assets of the Corporation available for distribution to its stockholders shall be insufficient to pay the holders of shares of any series of Series Preferred Stock then outstanding the full amount to which they shall be entitled under clause (a)(x) above with respect to the Series D Preferred Stock and under clause (b)(x) above with respect to the Series A Preferred Stock, the Series B Preferred Stock and the Series C Preferred Stock, the holders of all shares of Series Preferred Stock then outstanding shall share ratably in any distribution of the assets available for distribution in proportion to the respective amounts that would otherwise be payable in respect of the shares held by them upon such distribution if all amounts payable on or with respect to such shares were paid in full pursuant to clause (a)(x) above and clause (b)(x) above; for avoidance of doubt, upon an IPO (other than a Qualified IPO), amounts shall be payable only to holders of Series D Preferred Stock;

(d) For avoidance of doubt, the holders of shares of Series D Preferred Stock then outstanding shall not receive additional amounts under clause (a)(y) above (i.e., amounts that are greater than the amount to which such holders shall be entitled under clause (a)(x) above) unless and until the holders of shares of Series A Preferred Stock, Series B Preferred Stock and Series C Preferred Stock shall receive all amounts to which they shall be entitled under clause (b)(x) above, and similarly the holders of shares of Series A Preferred Stock, Series B Preferred Stock and Series C Preferred Stock then outstanding shall not receive additional amounts under clause (b)(y) above (i.e., amounts that are greater than the amount to which such holders shall be entitled under clause (b)(x) above) unless and until the holders of shares of Series D Preferred Stock shall receive all amounts to which they shall be entitled under clause (a)(x) above; and

(e) For avoidance of doubt, if the adjustments provided for in Subsection 4.9 would apply as a result of the Liquidation Event or Deemed Liquidation Event giving rise to payment hereunder, the computation of the number of shares of Common Stock into which the Series D Preferred Stock would be so convertible shall give effect to those adjustments, unless waived by the holders of at least a majority of the outstanding shares of Series D Preferred Stock.

2.3 Payments to Holders of Common Stock and Series Preferred Stock. In the event of any Liquidation Event or Deemed Liquidation Event, after the payment of all preferential amounts required to be paid pursuant to Subsections 2.1 and 2.2, any remaining assets of the Corporation available for distribution to its stockholders shall be distributed among the holders of shares of Common Stock, *pro rata* based on the number of shares held by each such holder.

2.4 Deemed Liquidation Events.

2.4.1 Definition.

(a) Each of the following events shall be considered a "**Deemed Liquidation Event**" unless the holders of at least a majority of the outstanding shares of Series D Preferred Stock (voting together as a single class) elect otherwise by written notice sent to the Corporation: (i) a merger, share exchange, consolidation, corporate reorganization or business combination of the Corporation or any subsidiary of the Corporation with or into another person or entity (a "**Merger Transaction**"); (ii) the sale, lease, exclusive license or other disposition by the Corporation or any subsidiaries of the Corporation of all or substantially all of the Corporation's assets to another entity, in a single transaction or series of transactions; or (iii) a transaction or series of transactions in which a Person (as defined below), or a Person and one or more of such Person's Affiliates (as defined below), acquires from the Corporation or its stockholders, shares (of any class) representing more than fifty percent (50%) of the outstanding voting power, on an as converted basis (a "**Change in Control Transaction**"). Notwithstanding any provision herein to the contrary, a merger, share exchange, consolidation, corporate reorganization or business combination within the meaning of clause (i) shall not be a Merger Transaction or a Deemed Liquidation Event if the stockholders of the Corporation immediately before such transaction own in the aggregate at least a majority of the Corporation's voting power after the transaction.

(b) "**Affiliate**" means, with respect to any specified individual, corporation, partnership, trust, limited liability company, association or other entity (each, a "**Person**"), any other Person who, directly or indirectly, controls, is controlled by or is under common control with such Person, including without limitation any general partner, managing member, officer or director of such Person or any venture capital fund now or hereafter existing that is controlled by or under common control with one or more general partners or managing members of, or shares the same management company with, such Person.

2.4.2 Effecting a Deemed Liquidation Event or Public Offering.

(a) The Corporation shall not effect a Deemed Liquidation Event or an IPO (other than a Qualified IPO), unless the documents for such transaction provide that the consideration payable to the stockholders of the Corporation shall be allocated among the holders of capital stock of the Corporation in accordance with Section 2.

(b) In the event of a Deemed Liquidation Event referred to in Subsection 2.4.1(a)(ii), the Corporation shall, within sixty (60) days after such Deemed Liquidation Event, either (1) dissolve in accordance with the Arizona Business Corporation Act or (2) distribute all of the proceeds received in the Deemed Liquidation Event (less only such amounts as are to be paid or set aside for creditors of the Corporation) to the stockholders of the Corporation as though the Corporation had liquidated in accordance with Section 2.

2.4.3 Amount Deemed Paid or Distributed. The amount deemed paid or distributed to the holders of capital stock of the Corporation upon any Deemed Liquidation Event shall be the cash or the value of the property, rights or securities paid or distributed to such

holders by the Corporation or the acquiring person, firm or other entity. The value of such property, rights or securities shall be determined in good faith by the Board.

2.4.4 Allocation of Escrow; Contingent Payments. In the event of a Deemed Liquidation Event, if any portion of the consideration payable to the Corporation and/or the stockholders of the Corporation is placed into escrow and/or is payable to the Corporation and/or the stockholders of the Corporation subject to contingencies, the transaction agreement(s) effecting the Deemed Liquidation Event (or, for a Deemed Liquidation Event referred to in Subsection 2.4.1(a)(ii), the documents effectuating the dissolution of the Corporation and distribution of proceeds) shall provide that (a) the portion of such consideration that is not placed in escrow and not subject to any contingencies (the "**Initial Consideration**") shall be allocated among the holders of capital stock of the Corporation in accordance with Subsections 2.1 through 2.3 as if the Initial Consideration were the only consideration payable in connection with such Deemed Liquidation Event and (b) any additional consideration which becomes payable to the stockholders of the Corporation upon release from escrow or satisfaction of contingencies shall be allocated among the holders of capital stock of the Corporation in accordance with Subsections 2.1 through 2.3 after taking into account the previous payment of the Initial Consideration as part of the same transaction.

3. Voting.

3.1 General. On any matter presented to the stockholders of the Corporation for their action or consideration at any meeting of stockholders of the Corporation (or by written consent of stockholders in lieu of meeting), each holder of outstanding shares of Series Preferred Stock shall be entitled to cast the number of votes equal to the number of whole shares of Common Stock into which the shares of Series Preferred Stock held by such holder are convertible as of the record date for determining stockholders entitled to vote on such matter. Except as provided by law or by the other provisions of these Articles of Incorporation, holders of Series Preferred Stock shall vote together with the holders of Common Stock as a single class.

3.2 Series D Preferred Stock Protective Provisions. At any time when at least 4,459,451 shares of Series D Preferred Stock are outstanding (subject to appropriate adjustment in the event of any stock dividend, stock split, combination or other similar recapitalization with respect to the Series D Preferred Stock), the Corporation shall not, either directly or indirectly by amendment, merger, consolidation or otherwise, do any of the following without (in addition to any other vote required by law or these Articles of Incorporation) the written consent or affirmative vote of the holders at least a majority of the then outstanding shares of Series D Preferred Stock, voting as a single class, given in writing or by vote at a meeting:

(a) increase or decrease (other than by redemption or conversion) the total number of authorized shares of Series D Preferred Stock;

(b) create, or authorize the creation of, or issue or obligate itself to issue shares of, any additional class or series of capital stock unless the same ranks junior to the Series D Preferred Stock with respect to the distribution of assets on a Liquidation Event or a Deemed Liquidation Event, rights of redemption and the payment of dividends;

(c) reclassify, alter or amend any existing security of the Corporation that is junior to or *pari passu* with the Series D Preferred Stock in respect of the distribution of assets on a Liquidation Event or a Deemed Liquidation Event, or the payment of dividends or rights of redemption, if such reclassification, alteration or amendment would render such other security senior to or *pari passu* with (in the case of a junior security) the Series D Preferred Stock in respect of any such right, preference or privilege;

(d) incur any indebtedness for money borrowed in excess of the committed indebtedness outstanding on the "Series D Original Issue Date" (as defined below) plus up to US$20,000,000 of additional "Qualified Indebtedness" (as defined below);

(e) purchase or redeem (or permit any subsidiary to purchase or redeem) or pay or declare any dividend or make any distribution on, any shares of capital stock of the Corporation other than: (i) dividends or other distributions payable on the Common Stock solely in the form of additional shares of Common Stock; (ii) repurchases by the Corporation under compensatory arrangements with former employees, officers, directors, consultants or other persons who performed services for the Corporation or for any of its subsidiaries on terms approved by the Board or a duly authorized committee thereof; or

(f) alter or amend the powers, preferences or rights of the Series D Preferred Stock.

For purposes hereof, "**Qualified Indebtedness**" means indebtedness for money borrowed on commercially reasonable terms either from a party that is not presently a stockholder of the Corporation or that is negotiated on a good faith, arms'-length basis with a stockholder of the Corporation. Qualified Indebtedness shall not include any indebtedness that provides for a premium on repayment or prepayment (i.e., beyond a commercially reasonable interest rate) or that is issued in tandem with any equity securities (or Options or Convertible Securities (as defined below) therefor) unless the same would be junior in right of payment, dividend rights and redemption rights to the Series D Preferred Stock.

3.3 Other Series Preferred Stock Protective Provisions.

(a) So long as any shares of Series A Preferred Stock are outstanding, the Corporation shall not without first obtaining the approval (by vote or written consent, as provided by law) of the holders of at least a majority of the then outstanding shares of Series A Preferred Stock, voting as a separate class:

(i) alter or change, whether by merger, consolidation or otherwise, the rights, preferences or privileges of the shares of Series A Preferred Stock so as to affect adversely such shares of Series A Preferred Stock;

(ii) increase or decrease (other than by redemption or conversion) the total number of authorized shares of Series A Preferred Stock; or

(iii) authorize or issue, or obligate itself to issue, any equity security (other than Series A Preferred Stock), including any other security convertible

into or exercisable for any equity security, having a preference over, or being on parity with, the Series A Preferred Stock with respect to dividends or liquidation.

(b) So long as any shares of Series B Preferred Stock are outstanding, the Corporation shall not without first obtaining the approval (by vote or written consent, as provided by law) of the holders of at least a majority of the then outstanding shares of Series B Preferred Stock, voting as a separate class:

(i) alter or change, whether by merger, consolidation or otherwise, the rights, preferences or privileges of the shares of Series B Preferred Stock so as to affect adversely such shares of Series B Preferred Stock;

(ii) increase or decrease (other than by redemption or conversion) the total number of authorized shares of Series B Preferred Stock; or

(iii) authorize or issue, or obligate itself to issue, any equity security (other than Series B Preferred Stock), including any other security convertible into or exercisable for any equity security, having a preference over, or being on parity with, the Series B Preferred Stock with respect to dividends or liquidation.

(c) So long as any shares of Series C Preferred Stock are outstanding, the Corporation shall not without first obtaining the approval (by vote or written consent, as provided by law) of the holders of at least a majority of the then outstanding shares of Series C Preferred Stock, voting as a separate class:

(i) alter or change, whether by merger, consolidation or otherwise, the rights, preferences or privileges of the shares of Series C Preferred Stock so as to affect adversely such shares of Series C Preferred Stock;

(ii) increase or decrease (other than by redemption or conversion) the total number of authorized shares of Series C Preferred Stock; or

(iii) authorize or issue, or obligate itself to issue, any equity security (other than Series C Preferred Stock), including any other security convertible into or exercisable for any equity security, having a preference over, or being on parity with, the Series C Preferred Stock with respect to dividends or liquidation.

4. Optional Conversion. The holders of the Series Preferred Stock shall have conversion rights as follows (the "**Conversion Rights**"):

4.1 Right to Convert.

4.1.1 Conversion Ratios. Each share of Series A Preferred Stock, Series B Preferred Stock and Series C Preferred Stock shall be convertible, at the option of the holder thereof, at any time and from time to time, and without the payment of additional consideration by the holder thereof, into one (1) fully paid and nonassessable share of Common Stock. Each share of Series D Preferred Stock shall be convertible, at the option of the holder thereof, at any

time and from time to time, and without the payment of additional consideration by the holder thereof, into such number of fully paid and nonassessable shares of Common Stock as is determined by dividing the Series D Original Issue Price by the Series D Conversion Price (as defined below) in effect at the time of conversion. The **"Series D Conversion Price"** shall initially be equal to the Series D Original Issue Price and shall be subject to adjustment as provided below.

4.1.2 Termination of Conversion Rights. In the event of a notice of redemption of any shares of Series D Preferred Stock pursuant to Section 6, the Conversion Rights of the shares designated for redemption shall terminate at the close of business on the last full day preceding the date fixed for redemption, unless the redemption price is not fully paid on such redemption date, in which case the Conversion Rights for such shares shall continue until such price is paid in full. In the event of a Liquidation Event or a Merger Transaction, the Conversion Rights shall terminate at the close of business on the last full day preceding the record date fixed for the payment of any such amounts distributable on such event to the holders of Series Preferred Stock.

4.2 Fractional Shares. No fractional shares of Common Stock shall be issued upon any conversion of Series Preferred Stock. In lieu of any fractional shares to which the holder would otherwise be entitled, the Corporation shall pay cash equal to such fraction multiplied by the fair market value of a share of Common Stock as determined in good faith by the Board. Whether or not fractional shares would be issuable upon such conversion shall be determined on the basis of the total number of shares of Series Preferred Stock the holder is at the time converting into Common Stock and the aggregate number of shares of Common Stock issuable upon such conversion.

4.3 Mechanics of Conversion.

4.3.1 Notice of Conversion. In order for a holder of Series Preferred Stock to voluntarily convert shares of Series Preferred Stock into shares of Common Stock, such holder shall surrender the certificate or certificates for such shares of Series Preferred Stock (or, if such registered holder alleges that such certificate has been lost, stolen or destroyed, a lost certificate affidavit and agreement reasonably acceptable to the Corporation to indemnify the Corporation against any claim that may be made against the Corporation on account of the alleged loss, theft or destruction of such certificate), at the office of the transfer agent for the Series Preferred Stock (or at the principal office of the Corporation if the Corporation serves as its own transfer agent), together with written notice that such holder elects to convert all or any number of the shares of the Series Preferred Stock represented by such certificate or certificates and, if applicable, any event on which such conversion is contingent. Such notice shall state such holder's name or the names of the nominees in which such holder wishes the certificate or certificates for shares of Common Stock to be issued. If required by the Corporation, certificates surrendered for conversion shall be endorsed or accompanied by a written instrument or instruments of transfer, in form satisfactory to the Corporation, duly executed by the registered holder or his, her or its attorney duly authorized in writing. The close of business on the date of receipt by the transfer agent (or by the Corporation if the Corporation serves as its own transfer agent) of such certificates (or lost certificate affidavit and agreement) and notice shall be the time of conversion (the "**Conversion Time**"), and the shares of Common Stock issuable upon

conversion of the shares represented by such certificate shall be deemed to be outstanding of record as of such date. The Corporation shall, as soon as practicable after the Conversion Time, (i) issue and deliver to such holder of Series Preferred Stock, or to his, her or its nominees, a certificate or certificates for the number of full shares of Common Stock issuable upon such conversion in accordance with the provisions hereof and a certificate for the number (if any) of the shares of Series Preferred Stock represented by the surrendered certificate that were not converted into Common Stock, (ii) pay in cash such amount as provided in Subsection 4.2 in lieu of any fraction of a share of Common Stock otherwise issuable upon such conversion and (iii) pay any declared but unpaid dividends on the shares of Series Preferred Stock converted and any accrued but unpaid Accruing Dividends on the Series D Preferred Stock through the Conversion Time.

4.3.2 Reservation of Shares. The Corporation shall at all times when the Series Preferred Stock shall be outstanding, reserve and keep available out of its authorized but unissued capital stock, for the purpose of effecting the conversion of the Series Preferred Stock, such number of its duly authorized shares of Common Stock as shall from time to time be sufficient to effect the conversion of all outstanding Series Preferred Stock; and if at any time the number of authorized but unissued shares of Common Stock shall not be sufficient to effect the conversion of all then outstanding shares of the Series Preferred Stock, the Corporation shall take such corporate action as may be necessary to increase its authorized but unissued shares of Common Stock to such number of shares as shall be sufficient for such purposes, including, without limitation, engaging in best efforts to obtain the requisite stockholder approval of any necessary amendment to these Articles of Incorporation.

4.3.3 Effect of Conversion. All shares of Series Preferred Stock which shall have been surrendered for conversion as herein provided shall no longer be deemed to be outstanding and all rights with respect to such shares shall immediately cease and terminate at the Conversion Time, except only the right of the holders thereof to receive shares of Common Stock in exchange therefor, to receive payment in lieu of any fraction of a share otherwise issuable upon such conversion as provided in Subsection 4.2 and to receive payment of any dividends declared but unpaid thereon and any accrued but unpaid Accruing Dividends on the Series D Preferred Stock through the Conversion Time. Any shares of Series Preferred Stock so converted shall be retired and cancelled and may not be reissued as shares of such series, and the Corporation may thereafter take such appropriate action (without the need for stockholder action) as may be necessary to reduce the authorized number of shares of Series A Preferred Stock, Series B Preferred Stock, Series C Preferred Stock or Series D Preferred Stock, as the case may be, accordingly.

4.3.4 No Further Adjustment. Upon any conversion of any Series Preferred Stock, no adjustment to the Series D Conversion Price shall be made for any declared but unpaid dividends on the Series Preferred Stock surrendered for conversion or on the Common Stock delivered upon conversion.

4.3.5 Taxes. The Corporation shall pay any and all issue and other similar taxes that may be payable in respect of any issuance or delivery of shares of Common Stock upon conversion of shares of Series Preferred Stock pursuant to this Section 4. The Corporation shall not, however, be required to pay any tax which may be payable in respect of

any transfer involved in the issuance and delivery of shares of Common Stock in a name other than that in which the shares of Series Preferred Stock so converted were registered, and no such issuance or delivery shall be made unless and until the person or entity requesting such issuance has paid to the Corporation the amount of any such tax or has established, to the satisfaction of the Corporation, that such tax has been paid.

4.4 Adjustments to Series D Conversion Price for Diluting Issues.

4.4.1 Special Definitions. For purposes of this Article III, the following definitions shall apply:

(a) "**Additional Shares of Common Stock**" shall mean all shares of Common Stock issued (or, pursuant to Subsection 4.4.3 below, deemed to be issued) by the Corporation after the Series D Original Issue Date, other than the following ("**Exempted Securities**"):

(i) shares of Common Stock, Options (as defined below) or Convertible Securities (as defined below) issued as a dividend or distribution on Series Preferred Stock;

(ii) shares of Common Stock, Options or Convertible Securities issued by reason of a dividend, stock split, split-up or other distribution on shares of Common Stock that is covered by Subsections 4.5, 4.6, 4.7, 4.8, or 4.9;

(iii) Options to purchase up to a total of 2,417,446 shares of Common Stock (and the Common Stock issuable pursuant thereto) that have been authorized prior to the Series D Original Issue Date by the Board for issuance to employees or directors of, or consultants or advisors to, the Corporation or any of its subsidiaries;

(iv) shares of Common Stock or Options therefor, issued to employees or directors of, or consultants or advisors to, the Corporation or any of its subsidiaries pursuant to a plan, agreement or arrangement approved by the Board, including any designee of Mandala Agribusiness Co-Investments I Limited (or its successors-in-interest) pursuant to that certain Voting Agreement dated on or about March 24, 2014 among the parties thereto, as amended from time to time in accordance with its terms (so long as such entity is entitled to designate a director under such agreement);

(v) shares of Common Stock or Convertible Securities actually issued upon the exercise of Options, or shares of Common Stock actually issued upon the conversion or exchange of Convertible Securities (including the Series Preferred Stock), in each case provided such issuance is pursuant to the terms of such Option or Convertible Security; or

(vi) shares of Common Stock, Options or Convertible Securities issued to banks, equipment lessors or other financial institutions or other lenders or to real property lessors, pursuant to a debt financing, equipment leasing or real

property leasing transactions approved by the Board and the principal purpose of which is not to raise proceeds from an equity financing, and so long as such bank, equipment lessor, financial institution, lender or real property lessor is not an Affiliate of (A) the Corporation, (B) any member of the Board or (C) any holder of the Series Preferred Stock or Common Stock of the Corporation;

(vii) shares of Common Stock, Options or Convertible Securities issued to customers, vendors, joint ventures and similar commercial persons in connection with commercial transactions approved by the Board, including any designee of Mandala Agribusiness Co-Investments I Limited (or its successors-in-interest) pursuant to that certain Voting Agreement dated on or about March 24, 2014 among the parties thereto, as amended from time to time in accordance with its terms (so long as such entity is entitled to designate a director under such agreement), and the principal purpose of which is not to raise proceeds from an equity financing; and

(viii) shares of Common Stock, Options or Convertible Securities issued as acquisition consideration in the acquisition of the stock or assets of another business entity by the Corporation, provided that such transaction is approved by the Board and that no seller of such assets or stock is an Affiliate of (A) the Corporation, (B) any member of the Board or (C) any holder of the Series Preferred Stock or Common Stock of the Corporation.

(b) "**Convertible Securities**" shall mean any evidences of indebtedness, shares or other securities directly or indirectly convertible into or exchangeable for Common Stock, but excluding Options.

(c) "**Options**" shall mean rights, options or warrants to subscribe for, purchase or otherwise acquire Common Stock or Convertible Securities.

(d) **"Series D Original Issue Date**" shall mean the date on which the first share of Series D Preferred Stock was issued.

4.4.2 No Adjustment of Conversion Prices. No adjustment in any Series D Conversion Price shall be made as the result of the issuance or deemed issuance of Additional Shares of Common Stock if the Corporation receives written notice from the holders of at least a majority of the then outstanding shares of Series D Preferred Stock (voting together as a single class on an as-converted basis) agreeing that no such adjustment shall be made as the result of the issuance or deemed issuance of such Additional Shares of Common Stock.

4.4.3 Deemed Issue of Additional Shares of Common Stock.

(a) If the Corporation at any time or from time to time after the Series D Original Issue Date shall issue any Options or Convertible Securities (excluding Options or Convertible Securities which are themselves Exempted Securities) or shall fix a record date for the determination of holders of any class of securities entitled to receive any such Options or Convertible Securities, then the maximum number of shares of Common Stock (as set forth in the instrument relating thereto, assuming the satisfaction of any conditions to exercisability,

convertibility or exchangeability but without regard to any provision contained therein for a subsequent adjustment of such number) issuable upon the exercise of such Options or, in the case of Convertible Securities and Options therefor, the conversion or exchange of such Convertible Securities, shall be deemed to be Additional Shares of Common Stock issued as of the time of such issue or, in case such a record date shall have been fixed, as of the close of business on such record date.

(b) If the terms of any Option or Convertible Security, the issuance of which resulted in an adjustment to the Series D Conversion Price pursuant to the terms of Subsection 4.4.4, are revised as a result of an amendment to such terms or any other adjustment pursuant to the provisions of such Option or Convertible Security (but excluding automatic adjustments to such terms pursuant to anti-dilution or similar provisions of such Option or Convertible

Security) to provide for either (1) any increase or decrease in the number of shares of Common Stock issuable upon the exercise, conversion and/or exchange of any such Option or Convertible Security or (2) any increase or decrease in the consideration payable to the Corporation upon such exercise, conversion and/or exchange, then, effective upon such increase or decrease becoming effective, the Series D Conversion Price computed upon the original issue of such Option or Convertible Security (or upon the occurrence of a record date with respect thereto) shall be readjusted to the Series D Conversion Price as would have obtained had such revised terms been in effect upon the original date of issuance of such Option or Convertible Security. Notwithstanding the foregoing, no readjustment pursuant to this Subsection 4.4.3(b) shall have the effect of increasing such Series D Conversion Price to an amount which exceeds the lower of (i) the Series D Conversion Price in effect immediately prior to the original adjustment made as a result of the issuance of such Option or Convertible Security and (ii) the Series D Conversion Price that would have resulted from any issuances of Additional Shares of Common Stock (other than deemed issuances of Additional Shares of Common Stock as a result of the issuance of such Option or Convertible Security) between the original adjustment date and such readjustment date.

(c) If the terms of any Option or Convertible Security (excluding Options or Convertible Securities which are themselves Exempted Securities), the issuance of which did not result in an adjustment to the Series D Conversion Price pursuant to the terms of Subsection 4.4.4 (either because the consideration per share (determined pursuant to Subsection 4.4.5) of the Additional Shares of Common Stock subject thereto was equal to or greater than the Series D Conversion Price then in effect, or because such Option or Convertible Security was issued before the Series D Original Issue Date), are revised after the Series D Original Issue Date as a result of an amendment to such terms or any other adjustment pursuant to the provisions of such Option or Convertible Security (but excluding automatic adjustments to such terms pursuant to anti-dilution or similar provisions of such Option or Convertible Security) to provide for either (1) any increase in the number of shares of Common Stock issuable upon the exercise, conversion or exchange of any such Option or Convertible Security or (2) any decrease in the consideration payable to the Corporation upon such exercise, conversion or exchange, then such Option or Convertible Security, as so amended or adjusted, and the Additional Shares of Common Stock subject thereto (determined in the manner provided in Subsection 4.4.3(a)) shall be deemed to have been issued effective upon such increase or decrease becoming effective.

(d) Upon the expiration or termination of any unexercised Option or unconverted or unexchanged Convertible Security (or portion thereof) which resulted (either upon its original issuance or upon a revision of its terms) in an adjustment to the Series D Conversion Price pursuant to the terms of Subsection 4.4.4, the Series D Conversion Price shall be readjusted to such Series D Conversion Price as would have obtained had such Option or Convertible Security (or portion thereof) never been issued.

(e) If the number of shares of Common Stock issuable upon the exercise, conversion and/or exchange of any Option or Convertible Security, or the consideration payable to the Corporation upon such exercise, conversion and/or exchange, is calculable at the time such Option or Convertible Security is issued or amended but is subject to adjustment based upon subsequent events, any adjustment to the Series D Conversion Price provided for in this Subsection 4.4 shall be effected at the time of such issuance or amendment based on such number of shares or amount of consideration without regard to any provisions for subsequent adjustments (and any subsequent adjustments shall be treated as provided in clauses (b) and (c) of this Subsection 4.4.3). If the number of shares of Common Stock issuable upon the exercise, conversion and/or exchange of any Option or Convertible Security, or the consideration payable to the Corporation upon such exercise, conversion and/or exchange, cannot be calculated at all at the time such Option or Convertible Security is issued or amended, any adjustment to the Series D Conversion Price that would result under the terms of this Subsection 4.4.3 at the time of such issuance or amendment shall instead be effected at the time such number of shares and/or amount of consideration is first calculable (even if subject to subsequent adjustments), assuming for purposes of calculating such adjustment to the Series D Conversion Price that such issuance or amendment took place at the time such calculation can first be made.

4.4.4 Adjustment of Conversion Prices Upon Issuance of Additional Shares of Common Stock. In the event the Corporation shall at any time after the Series D Original Issue Date, issue Additional Shares of Common Stock (including Additional Shares of Common Stock deemed to be issued pursuant to Subsection 4.4.3), without consideration or for a consideration per share less than the applicable Series D Conversion Price in effect immediately prior to such issue, the Series D Conversion Price then in effect shall be recalculated according to the following formula, unless waived by the holders of at least a majority of the outstanding shares of Series D Preferred Stock:

New Series D Conversion Price = (A-B) / (C-D),

Where A equals the pre-money equity value of the Corporation immediately before the issuance of Additional Shares of Common Stock;

Where B equals the Series D Original Issue Price multiplied by the number of shares of Series D Preferred Stock then outstanding;

Where C equals the total number of shares of Common Stock outstanding immediately before the issuance of Additional Shares of Common Stock, on a fully diluted basis assuming the conversion of all Convertible Securities into Common Stock and the exercise of all Options; and

Where D equals the total number of shares of Common Stock into which the then outstanding shares of Series D Preferred Stock would convert based on the Series D Conversion Price then in effect;

provided that if such issuance or deemed issuance was without consideration, then the Corporation shall be deemed to have received an aggregate of US$.0001 of consideration for all such Additional Shares of Common Stock issued or deemed to be issued, and further provided that no such recalculation of the Series D Conversion Price shall cause the Series D Conversion Price to be greater than the Series D Conversion Price then in effect.

4.4.5 Determination of Consideration. For purposes of this Subsection 4.4, the consideration received by the Corporation for the issue of any Additional Shares of Common Stock shall be computed as follows:

(a) Cash and Property: Such consideration shall:

(i) insofar as it consists of cash, be computed at the aggregate amount of cash received by the Corporation, excluding amounts paid or payable for accrued interest;

(ii) insofar as it consists of property other than cash, be computed at the fair market value thereof at the time of such issue, as determined in good faith by the Board; and

(iii) in the event Additional Shares of Common Stock are issued together with other shares or securities or other assets of the Corporation for consideration which covers both, be the proportion of such consideration so received, computed as provided in clauses (i) and (ii) above, as determined in good faith by the Board.

(b) Options and Convertible Securities. The consideration per share received by the Corporation for Additional Shares of Common Stock deemed to have been issued pursuant to Subsection 4.4.3, relating to Options and Convertible Securities, shall be determined by dividing

(i) the total amount, if any, received or receivable by the Corporation as consideration for the issue of such Options or Convertible Securities, plus the minimum aggregate amount of additional consideration (as set forth in the instruments relating thereto, without regard to any provision contained therein for a subsequent adjustment of such consideration) payable to the Corporation upon the exercise of such Options or the conversion or exchange of such Convertible Securities, or in the case of Options for Convertible Securities, the exercise of such Options for Convertible Securities and the conversion or exchange of such Convertible Securities, by

(ii) the maximum number of shares of Common Stock (as set forth in the instruments relating thereto, without regard to any provision contained therein for a subsequent adjustment of such number) issuable upon the exercise of such

Options or the conversion or exchange of such Convertible Securities, or in the case of Options for Convertible Securities, the exercise of such Options for Convertible Securities and the conversion or exchange of such Convertible Securities.

4.4.6 Multiple Closing Dates. In the event the Corporation shall issue on more than one date Additional Shares of Common Stock that are a part of one transaction or a series of related transactions and that would result in an adjustment to the Series D Conversion Price pursuant to the terms of Subsection 4.4.4, and such issuance dates occur within a period of no more than ninety (90) days from the first such issuance to the final such issuance, then, upon the final such issuance, the Series D Conversion Price shall be readjusted to give effect to all such issuances as if they occurred on the date of the first such issuance (and without giving effect to any additional adjustments as a result of any such subsequent issuances within such period).

4.5 Adjustment for Stock Splits and Combinations. If the Corporation shall at any time or from time to time after the Series D Original Issue Date effect a subdivision of the outstanding Common Stock, the Series D Conversion Price in effect immediately before that subdivision shall be proportionately decreased so that the number of shares of Common Stock issuable on conversion of each share of such series shall be increased in proportion to such increase in the aggregate number of shares of Common Stock outstanding. If the Corporation shall at any time or from time to time after the Series D Original Issue Date combine the outstanding shares of Common Stock, the Series D Conversion Price in effect immediately before the combination shall be proportionately increased so that the number of shares of Common Stock issuable on conversion of each share of such series shall be decreased in proportion to such decrease in the aggregate number of shares of Common Stock outstanding. Any adjustment under this subsection shall become effective at the close of business on the date the subdivision or combination becomes effective.

4.6 Adjustment for Certain Dividends and Distributions. In the event the Corporation at any time or from time to time after the Series D Original Issue Date shall make or issue, or fix a record date for the determination of holders of Common Stock entitled to receive, a dividend or other distribution payable on the Common Stock in additional shares of Common Stock, then and in each such event the Series D Conversion Price in effect immediately before such event shall be decreased as of the time of such issuance or, in the event such a record date shall have been fixed, as of the close of business on such record date, in accordance with the provisions of Subsection 4.4.4.

Notwithstanding the foregoing, (a) if such record date shall have been fixed and such dividend is not fully paid or if such distribution is not fully made on the date fixed therefor, the Series D Conversion Price shall be recomputed accordingly as of the close of business on such record date and thereafter the Series D Conversion Price shall be adjusted pursuant to this subsection as of the time of actual payment of such dividends or distributions; and (b) no such adjustment shall be made if the holders of the Series D Preferred Stock simultaneously receive a dividend or other distribution of shares of Common Stock in a number equal to the number of shares of Common Stock as they would have received if all outstanding shares of Series D Preferred Stock had been converted into Common Stock on the date of such event.

4.7 Adjustment for Other Dividends or Distributions. In the event the Corporation at any time or from time to time after the Series D Original Issue Date shall make or issue, or fix a record date for the determination of holders of Common Stock entitled to receive, a dividend or other distribution payable in securities of the Corporation (other than a distribution of shares of Common Stock in respect of outstanding shares of Common Stock) or in other property and the provisions of Section 1 do not apply to such dividend or distribution, then and in each such event the holders of Series D Preferred Stock shall receive, simultaneously with the distribution to the holders of Common Stock, a dividend or other distribution of such securities or other property in an amount equal to the amount of such securities or other property as they would have received if all outstanding shares of Series D Preferred Stock had been converted into Common Stock on the date of such event.

4.8 Adjustment for Merger or Reorganization, etc. Subject to the provisions of Subsection 2.4, if there shall occur any reorganization, recapitalization, reclassification, consolidation or merger involving the Corporation in which the Common Stock (but not the Series D Preferred Stock) is converted into or exchanged for securities, cash or other property (other than a transaction covered by Subsections 4.4, 4.6 or 4.7), then, following any such reorganization, recapitalization, reclassification, consolidation or merger, each share of Series D Preferred Stock shall thereafter be convertible in lieu of the Common Stock into which it was convertible prior to such event into the kind and amount of securities, cash or other property which a holder of the number of shares of Common Stock of the Corporation issuable upon conversion of one share of such Series D Preferred Stock immediately prior to such reorganization, recapitalization, reclassification, consolidation or merger would have been entitled to receive pursuant to such transaction; and, in such case, appropriate adjustment (as determined in good faith by the Board) shall be made in the application of the provisions in this Section 4 with respect to the rights and interests thereafter of the holders of the Series D Preferred Stock to the end that the provisions set forth in this Section 4 (including provisions with respect to changes in and other adjustments of the Series D Conversion Price) shall thereafter be applicable, as nearly as reasonably may be, in relation to any securities or other property thereafter deliverable upon the conversion of the Series D Preferred Stock. For the avoidance of doubt, nothing in this Subsection 4.8 shall be construed as preventing the holders of Series D Preferred Stock from seeking any appraisal or dissenters' rights to which they are otherwise entitled under applicable law in connection with a merger triggering an adjustment hereunder, nor shall this Subsection 4.8 be deemed conclusive evidence of the fair value of the shares of Series D Preferred Stock in any such appraisal or dissenters' rights proceeding.

4.9 Special Adjustment for Series D Preferred Stock. In addition to the foregoing provisions, in the event of a Liquidation Event or a Deemed Liquidation Event or a Qualified IPO in which the proceeds available for distribution to stockholders (in the case of a Liquidation Event or a Deemed Liquidation Event) or the pre-money equity value of the Corporation (in the case of a Qualified IPO) is less than US$400,000,000, then the Series D Conversion Price then in effect shall be recalculated according to the following formula, unless waived by the holders of at least a majority of the outstanding shares of Series D Preferred Stock:

New Series D Conversion Price = (A - (2 * B) - C) / (D - E),

Where A equals the pre-money equity value of the Corporation immediately before the Liquidation Event, Deemed Liquidation Event or Qualified IPO;

Where B equals the Series D Original Issue Price multiplied by the number of shares of Series D Preferred Stock then outstanding;

Where C equals the aggregate accrued but unpaid Accruing Dividends on all such shares of Series D Preferred Stock through the date of such calculation;

Where D equals the total number of shares of Common Stock outstanding immediately before the Liquidation Event, Deemed Liquidation Event or Qualified IPO, on a fully diluted basis assuming the conversion of all Convertible Securities into Common Stock and the exercise of all Options; and

Where E equals the total number of shares of Common Stock into which the then outstanding shares of Series D Preferred Stock would convert based on the Series D Conversion Price then in effect.

Such adjustment shall be effective as of immediately prior to the Liquidation Event, Deemed Liquidation Event or Qualified IPO, as the case may be. For the avoidance of doubt, no such recalculation of the Series D Conversion Price shall cause the Series D Conversion Price to be greater than the Series D Conversion Price then in effect.

4.10 Certificate as to Adjustments. Upon the occurrence of each adjustment or readjustment of the Series D Conversion Price pursuant to this Section 4, the Corporation at its expense shall, as promptly as reasonably practicable but in any event not later than ten (10) days thereafter, compute such adjustment or readjustment in accordance with the terms hereof and furnish to each holder of Series D Preferred Stock a certificate setting forth such adjustment or readjustment (including the kind and amount of securities, cash or other property into which the Series Preferred Stock is convertible) and showing in detail the facts upon which such adjustment or readjustment is based. The Corporation shall, as promptly as reasonably practicable after the written request at any time of any holder of Series D Preferred Stock (but in any event not later than ten (10) days thereafter), furnish or cause to be furnished to such holder a certificate setting forth (i) the Series D Conversion Price then in effect, and (ii) the number of shares of Common Stock and the amount, if any, of other securities, cash or property which then would be received upon the conversion of such Series D Preferred Stock.

4.11 Notice of Record Date. In the event:

(a) the Corporation shall take a record of the holders of its Common Stock (or other capital stock or securities at the time issuable upon conversion of the Series Preferred Stock) for the purpose of entitling or enabling them to receive any dividend or other distribution, or to receive any right to subscribe for or purchase any shares of capital stock of any class or any other securities, or to receive any other security; or

(b) of any capital reorganization of the Corporation, any reclassification of the Common Stock of the Corporation, any Deemed Liquidation Event or any IPO (other than a Qualified IPO); or

(c) of the voluntary or involuntary dissolution, liquidation or winding-up of the Corporation,

then, and in each such case, the Corporation will send or cause to be sent to the holders of the Series Preferred Stock a notice specifying, as the case may be, (i) the record date for such dividend, distribution or right, and the amount and character of such dividend, distribution or right, or (ii) the effective date on which such reorganization, reclassification, consolidation, merger, transfer, dissolution, liquidation, winding-up or public offering is proposed to take place, and the time, if any is to be fixed, as of which the holders of record of Common Stock (or such other capital stock or securities at the time issuable upon the conversion of the Series Preferred Stock) shall be entitled to exchange their shares of Common Stock (or such other capital stock or securities) for securities or other property deliverable upon such reorganization, reclassification, consolidation, merger, transfer, dissolution, liquidation, winding-up or public offering, and the amount per share and character of such exchange applicable to the Series Preferred Stock and the Common Stock. Such notice shall be sent at least ten (10) days prior to the record date or effective date for the event specified in such notice, unless holders of at least a majority of the then outstanding shares of Series Preferred Stock (voting as a single class on an as-converted basis) agree in writing to a shorter notice period.

5. Mandatory Conversion.

5.1 Trigger Events. Upon the closing of the sale of shares of Common Stock to the public in a firm-commitment underwritten public offering pursuant to an effective registration statement under the Securities Act of 1933, as amended (an "**IPO**"), each outstanding share of Series A Preferred Stock, Series B Preferred Stock and Series C Preferred Stock shall automatically be converted into one (1) share of Common Stock. Upon the closing of an IPO resulting in a placement of stock representing a public flotation of at least:

(a) in the case of an IPO with a pre-money valuation of up to US$500,000,000, (x) 15% of the aggregate capital stock of the Corporation (including any shares placed in secondary offerings) and (y) US$75,000,000; or

(b) in the case of an IPO with a pre-money valuation in excess of US$500,000,000, (x) 15% of the aggregate capital stock of the Corporation (including any shares placed in secondary offerings) or (y) US$75,000,000;

(a "**Qualified IPO**"), all outstanding shares of Series D Preferred Stock shall automatically be converted into shares of Common Stock at the then effective conversion rate subject to adjustment pursuant to the provisions of Subsection 5.2. The time of any such closing is referred to herein as the "**Mandatory Conversion Time**").

5.2 Qualified IPO Conversion for Series D Preferred Stock.

(a) In the event of a Qualified IPO in which the pre-money equity value of the Corporation is less than US$400,000,000, all outstanding shares of Series D Preferred Stock shall automatically be converted into shares of Common Stock at the then effective conversion rate subject to adjustment pursuant to the following formula, unless waived by the holders of at least a majority of the outstanding shares of Series D Preferred Stock:

New Series D Conversion Rate = ((2*A + B) / C) / D,

Where A equals the Series D Original Issue Price multiplied by the number of shares of Series D Preferred Stock then outstanding;

Where B equals the aggregate accrued but unpaid Accruing Dividends on all such shares of Series D Preferred Stock through the date of such calculation, plus any other any dividends declared but unpaid with respect to such shares of Series D Preferred Stock;

Where C equals the number of shares of Series D Preferred Stock then outstanding; and

Where D equals the Series D Conversion Price calculated pursuant to Subsection 4.9.

(b) In the event of a Qualified IPO in which the pre-money equity value of the Corporation is equal to or greater than US$400,000,000, all outstanding shares of Series D Preferred Stock shall automatically be converted into a number of shares of Common Stock at the greatest of the following, to be decided by the holders of at least a majority of the outstanding shares of Series D Preferred Stock: (i) the then effective conversion rate, (ii) the rate determined in accordance with the formula set forth in Subsection 5.2(a) above, and (iii) the rate which creates upon conversion the following number of shares of Common Stock into which the Series D Preferred Stock would convert:

Number of Shares of Common Stock into which the Series D Preferred Stock would convert = A + (B/C) + (D/C),

Where A equals the number of shares of Series D Preferred Stock then outstanding;

Where B equals the Series D Original Issue Price multiplied by the number of shares of Series D Preferred Stock then outstanding;

Where C equals the per share price at which Common Stock is sold in the Qualified IPO; and

Where D equals the aggregate accrued but unpaid Accruing Dividends on all such shares of Series D Preferred Stock through the date of such calculation, plus any other any dividends declared but unpaid with respect to such shares of Series D Preferred Stock.

(c) Any adjustment made pursuant to this Subsection 5.2 shall be effective as of immediately prior to the Qualified IPO. For the avoidance of doubt, no such recalculation of the Series D conversion rate shall cause the Series D conversion rate to be less than the Series D conversion rate then in effect.

5.3 Procedural Requirements. All holders of record of shares of the applicable Series Preferred Stock shall be sent written notice of the Mandatory Conversion Time and the place designated for mandatory conversion of all such shares of the applicable Series Preferred Stock pursuant to this Section 5. Such notice need not be sent in advance of the occurrence of the Mandatory Conversion Time. Upon receipt of such notice, each holder of shares of the applicable Series Preferred Stock shall surrender his, her or its certificate or certificates for all such shares (or, if such holder alleges that such certificate has been lost, stolen or destroyed, a lost certificate affidavit and agreement reasonably acceptable to the Corporation to indemnify the Corporation against any claim that may be made against the Corporation on account of the alleged loss, theft or destruction of such certificate) to the Corporation at the place designated in such notice. If so required by the Corporation, certificates surrendered for conversion shall be endorsed or accompanied by written instrument or instruments of transfer, in form satisfactory to the Corporation, duly executed by the registered holder or by his, her or its attorney duly authorized in writing. All rights with respect to the applicable Series Preferred Stock converted pursuant to Subsection 5.1, including the rights, if any, to receive notices and vote (other than as a holder of Common Stock), will terminate at the applicable Mandatory Conversion Time (notwithstanding the failure of the holder or holders thereof to surrender the certificates at or prior to such time), except only the rights of the holders thereof, upon surrender of their certificate or certificates (or lost certificate affidavit and agreement) therefor, to receive the items provided for in the next sentence of this Subsection 5.3. As soon as practicable after the Mandatory Conversion Time and the surrender of the certificate or certificates (or lost certificate affidavit and agreement) for the applicable Series Preferred Stock, the Corporation shall issue and deliver to such holder, or to his, her or its nominees, a certificate or certificates for the number of full shares of Common Stock issuable on such conversion in accordance with the provisions hereof, together with cash (1) as provided in Subsection 4.2 in lieu of any fraction of a share of Common Stock otherwise issuable upon such conversion, (2) for the payment of any declared but unpaid dividends on the shares of Series Preferred Stock converted and (3) in the case of mandatory conversion of the Series D Preferred Stock, the payment of any accrued but unpaid Accruing Dividends on such Series D Preferred Stock through the Mandatory Conversion Time. In lieu of making the cash payment contemplated by Subsection 5.3(3), the Corporation may, at its option, instead issue to the holders of Series D Preferred Stock shares of Common Stock having an aggregate value equal to the total accrued but unpaid Accruing Dividends thereon (valuing the Common Stock at the price per share offered to the public in the Qualified IPO). For avoidance of doubt, all calculations of conversion rates under this Subsection 5.3 shall be done in accordance with Subsection 5.2.

5.4 No Reissuance. Any such converted Series Preferred Stock shall be retired and cancelled and may not be reissued, and the Corporation may thereafter take such appropriate action (without the need for stockholder action) as may be necessary to reduce the authorized number of shares of the applicable Series Preferred Stock accordingly.

6. Redemption.

6.1 Redemption at Option of the Series D Preferred Stock. Shares of Series D Preferred Stock shall be redeemed by the Corporation out of funds lawfully available therefor at the Redemption Price (as defined and determined below), in two annual installments commencing not more than ninety (90) days after receipt by the Corporation at any time on or after the eight year anniversary of the Series D Original Issue Date, from the holders of at least a majority of the then-outstanding shares of Series D Preferred Stock, of written notice requesting redemption of all shares of Series D Preferred Stock. The date of each such installment shall be referred to as a "**Redemption Date**". On each Redemption Date, the Corporation shall redeem, on a pro rata basis in accordance with the number of shares of Series D Preferred Stock owned by each holder, that number of outstanding shares of Series D Preferred Stock determined by dividing (i) the total number of shares of Series D Preferred Stock outstanding immediately prior to such Redemption Date by (ii) the number of remaining Redemption Dates (including the Redemption Date to which such calculation applies). Upon receipt of a redemption request, the Corporation shall apply all of its assets to any such redemption, and to no other corporate purpose, except to the extent prohibited by Arizona law governing distributions to stockholders. If the Corporation does not have sufficient funds legally available to redeem on any Redemption Date all shares of Series D Preferred Stock to be redeemed on such Redemption Date, the Corporation shall redeem a pro rata portion of each holder's redeemable shares of such capital stock out of funds legally available therefor, based on the respective amounts which would otherwise be payable in respect of the shares to be redeemed if the legally available funds were sufficient to redeem all such shares, and shall redeem the remaining shares to have been redeemed as soon as practicable after the Corporation has funds legally available therefor.

6.2 Redemption at Option of the Corporation. All shares of Series D Preferred Stock shall be redeemed by the Corporation out of funds lawfully available therefor at the Redemption Price, not more than ninety (90) days after delivery by the Corporation (at its sole option) any time on or after the four year anniversary of the Series D Original Issue Date, of written notice advising as to the redemption of all outstanding shares of Series D Preferred Stock. The date of such redemption shall also be referred to as the "**Redemption Date**", as the context indicates.

6.3 Redemption Price. The "**Redemption Price**" per share of Series D Preferred Stock shall be equal to the greater of (i) the sum of (A) the Series D Original Issue Price multiplied by two, plus (B) the accrued but unpaid Accruing Dividends on such Series D Preferred Stock through the Redemption Date, or (ii) the fair market value thereof, as calculated in accordance with the last sentence of this Subsection 6.3. The fair market value shall be determined by mutual agreement between the Corporation and holders of a majority of the then-outstanding shares of Series D Preferred Stock. If such parties cannot agree on the fair market value within (fifteen) (15) days after delivery of the written notice required by Subsection 6.1 or 6.2, as applicable, such parties shall engage a mutually acceptable, nationally recognized, independent valuation firm to determine the fair market value. Such firm shall be instructed to deliver its determination within thirty (30) days and that determination will be final and binding as to all parties. The fees for such firm will be borne by the Corporation, and one-half of the fee shall be deducted ratably from the redemption payments to the holders of Series D Preferred Stock. In any case, the fair market value will be determined taking into account (and any

valuation obtained for the purposes of this Section 6.3 shall provide separate component values for) the participation features of the Series D Preferred Stock, the liquidation preferences, the right to Accruing Dividends and all other rights and entitlements attached to the Series D Preferred Stock, but shall not take into account any minority discount, liquidity discount or discounts relating to blockages or restrictions on sale.

6.4 Redemption Notice. The Corporation shall send written notice of mandatory redemption (the "**Redemption Notice**") to each holder of record of Series D Preferred Stock not less than forty (40) days prior to any Redemption Date. Each Redemption Notice shall state:

(a) the number of shares of Series D Preferred Stock held by the holder that the Corporation shall redeem on the Redemption Date specified in the Redemption Notice;

(b) the Redemption Date and the Redemption Price (if known on the date of the Redemption Notice; otherwise, the Corporation shall promptly notify the holders of the Redemption Price when the same is determined as provided above);

(c) the date upon which the holder's right to convert such shares terminates (as determined in accordance with Subsection 4.1); and

(d) that the holder is to surrender to the Corporation, in the manner and at the place designated, his, her or its certificate or certificates representing the shares of Series D Preferred Stock to be redeemed.

6.5 Surrender of Certificates; Payment. On or before the applicable Redemption Date, each holder of shares of Series D Preferred Stock to be redeemed on such Redemption Date, unless such holder has exercised his, her or its right to convert such shares as provided in Section 4, shall surrender the certificate or certificates representing such shares (or, if such registered holder alleges that such certificate has been lost, stolen or destroyed, a lost certificate affidavit and agreement reasonably acceptable to the Corporation to indemnify the Corporation against any claim that may be made against the Corporation on account of the alleged loss, theft or destruction of such certificate) to the Corporation, in the manner and at the place designated in the Redemption Notice, and thereupon the Redemption Price for such shares shall be payable to the order of the person whose name appears on such certificate or certificates as the owner thereof. In the event less than all of the shares of Series D Preferred Stock represented by a certificate are redeemed, a new certificate representing the unredeemed shares of Series D Preferred Stock shall promptly be issued to such holder.

6.6 Rights Subsequent to Redemption. If the Redemption Notice shall have been duly given, and if on the applicable Redemption Date the Redemption Price payable upon redemption of the shares of Series D Preferred Stock to be redeemed on such Redemption Date is paid or tendered for payment or deposited with an independent payment agent so as to be available therefor in a timely manner, then notwithstanding that the certificates evidencing any of the shares of Series D Preferred Stock so called for redemption shall not have been surrendered,

dividends with respect to such shares of Series D Preferred Stock shall cease to accrue after such Redemption Date and all rights with respect to such shares (including the right to receive any undeclared Accruing Dividends) shall forthwith after the Redemption Date terminate, except only the right of the holders to receive the Redemption Price without interest upon surrender of their certificate or certificates therefor.

7. Redeemed or Otherwise Acquired Shares. Any shares of Series Preferred Stock that are redeemed or otherwise acquired by the Corporation or any of its subsidiaries shall be automatically and immediately cancelled and retired and shall not be reissued, sold or transferred. Neither the Corporation nor any of its subsidiaries may exercise any voting or other rights granted to the holders of the shares of Series Preferred Stock so redeemed or acquired.

8. Waiver. Any of the rights, powers, preferences and other terms of the Series A Preferred Stock, Series B Preferred Stock, Series C Preferred Stock or Series D Preferred Stock set forth herein may be waived on behalf of all holders of such Series A Preferred Stock, Series B Preferred Stock, Series C Preferred Stock or Series D Preferred Stock, as applicable, by the affirmative written consent or vote of the holders of a majority of the shares of the Series A Preferred Stock, Series B Preferred Stock, Series C Preferred Stock or Series D Preferred Stock, as the case may be.

9. Notices to Stockholders. Any notice required or permitted by the provisions of this Article III to be given to a stockholder (a) may be mailed, postage prepaid, to the post office address last shown on the records of the Corporation, and shall be deemed sent upon such mailing or (b) may be given by any other means permitted by the Arizona Business Corporation Act or by the Bylaws for the giving of notice.

ARTICLE IV
KNOWN PLACE OF BUSINESS

The street address of the known place of business of the Corporation is:

Arcadia Biosciences, Inc.
202 Cousteau Place, Suite 200
Davis, CA 95618

ARTICLE V
ADDRESS OF REGISTERED OFFICE;
NAME OF REGISTERED AGENT

The name and address of the statutory agent of the Corporation is:

Wendy S. Neal
4222 E. Thomas Road
Suite 245
Phoenix, Arizona 85018

ARTICLE VI
BOARD OF DIRECTORS

The business and affairs of the Corporation shall be conducted by a Board of Directors, subject to the limitations set forth herein.

1. Number Of Directors.

The name and addresses of the persons who serve as the directors until the next annual meeting of shareholders or until successors are elected and qualified are:

Darby Shupp
4222 E. Thomas Road
Suite 245
Phoenix, Arizona 85018

Eric J. Rey
4222 E. Thomas Road
Suite 245
Phoenix, Arizona 85018

James Reis
4222 E. Thomas Road
Suite 245
Phoenix, Arizona 85018

Rachel Sheinbein
4222 E. Thomas Road
Suite 245
Phoenix, Arizona 85018

Mark Wong
4222 E. Thomas Road
Suite 245
Phoenix, Arizona 85018

Uday Garg
C/O GFin Corporate Services Ltd.
9th Floor, Orange Tower
Cybercity, Ebene
Mauritius

The number of persons to serve on the Board of Directors thereafter shall be fixed by the Bylaws of the Corporation; provided, however, that in no event shall the number of persons to serve on the Board of Directors be fixed below five (5) persons.

2. Vacancies.

Vacancies on the Board of Directors whether created by an increase in the number of directors, or by death, disability, resignation or removal, shall be filled by a vote of a majority of directors then remaining in office at a regular meeting, or a special meeting called for such purpose. Each director so chosen shall hold office until his or her successor shall be duly elected and qualified, or until his or her earlier death, resignation or removal.

3. Removal.

A director may be removed by the shareholders at a special meeting of such shareholders, called for such purpose in conformity with the Corporation's Bylaws.

ARTICLE VII
INDEMNIFICATION OF DIRECTORS

The Corporation shall indemnify any and all of its existing and former directors and officers to the fullest extent permitted by the Arizona Business Corporation Act. If the Arizona Business Corporation Act is amended to authorize corporate action broadening the Corporation's ability to indemnify its directors and officers, the Corporation shall indemnify its existing and former directors and officers to the fullest extent permitted by the Arizona Business Corporation Act, as amended. Any repeal or modification of this Article VII shall not adversely affect any right or protection of any existing or former director or officer of the Corporation existing hereunder with respect to any act or omission occurring prior to or at the time of such repeal or modification. The provisions of this Article VII shall not be deemed to limit or preclude indemnification of a director by the Corporation for any liability of a director that has not been eliminated by the provisions of Article VIII.

ARTICLE VIII
LIMITATION ON LIABILITY OF DIRECTORS

The liability of a director or former director to the Corporation or its shareholders shall be eliminated to the fullest extent permitted by the Arizona Business Corporation Act such that a former or existing director of the Corporation shall not be liable to the Corporation or its stockholders for monetary damages for any action taken or any failure to take any action as a director. No repeal, amendment or modification of this Article VIII, whether direct or indirect, shall eliminate or reduce its effect with respect to any act or omission or a director of the Corporation occurring prior to such repeal, amendment or modification. If the Arizona Business Corporation Act is amended to authorize corporate action further eliminating or limiting the liability of directors, the liability of a director of the Corporation shall be eliminated or limited to the fullest extent permitted by the Arizona Business Corporation Act, as amended.

ARTICLE IX
AMENDMENT OF ARTICLES OF INCORPORATION

The Corporation reserves the right to alter or repeal any provision contained in these Articles of Incorporation in the manner prescribed by the laws of the State of Arizona and all rights conferred upon shareholders are granted subject to this reservation; provided, however, that no amendment, alteration or repeal may be made to (i) Article III.B.3.2 without the prior written approval of a majority of the holder(s) of the Series D Preferred Stock, (ii) Article III.B.3.3(a) without the prior written approval of a majority of the holder(s) of the Series A Preferred Stock, (iii) Article III.B.3.3(b) without the approval of a majority of the holder(s) of the Series B Preferred Stock or (iv) Article III.B.3.3(c) without the approval of a majority of the holder(s) of the Series C Preferred Stock.

BYLAWS

OF

ARCADIA BIOSCIENCES, INC.

I. REFERENCES TO CERTAIN TERMS AND CONSTRUCTION

1.01. Certain References. Any reference herein made to law will be deemed to refer to the law of the State of Arizona, including any applicable provision of Chapters 1 through 17 of Title 10 of the Arizona Revised Statutes, or any successor statute, as from time to time amended and in effect (sometimes referred to herein as the "Arizona Business Corporation Act"). Any reference herein made to the corporation's Articles will be deemed to refer to its Articles of Incorporation and all amendments thereto as at any given time on file with the Arizona Corporation Commission. Except as otherwise required by law and subject to any procedures established by the corporation pursuant to Arizona Revised Statutes Section 723, the term "shareholder" as used herein shall mean one who is a holder of record of shares of the corporation. References to specific sections of law herein made shall be deemed to refer to such sections, or any comparable successor provisions, as from time to time amended and in effect.

1.02. Seniority. The law and the Articles (in that order of precedence) will in all respects be considered senior and superior to these Bylaws, with any inconsistency to be resolved in favor of the law and such Articles (in that order of precedence), and with these Bylaws to be deemed automatically amended from time to time to eliminate any such inconsistency which may then exist.

1.03. Computation of Time. The time during which an act is required to be done, including the time for the giving of any required notice herein, shall be computed by excluding the first day or hour, as the case may be, and including the last day or hour.

II. OFFICES

2.01. Principal Office. The principal office of the corporation shall be located at any place either within or outside the State of Arizona as designated in the corporation's most current Annual Report filed with the Arizona Corporation Commission or in any other document executed and delivered to the Arizona Corporation Commission for filing. If a principal office is not so designated, the principal office of the corporation shall mean the known place of business of the corporation. The corporation may have such other offices, either within or without the State of Arizona, as the Board of Directors may designate or as the business of the corporation may require from time to time.

2.02. Known Place of Business. A known place of business of the corporation shall be located within the State of Arizona and may be, but need not be, the address of the statutory agent of the corporation. The corporation may change its known place of business from time to time in accordance with the relevant provisions of the Arizona Business Corporation Act.

III. SHAREHOLDERS

3.01. Annual Shareholder Meeting. The annual meeting of the shareholders shall be held beginning with the year 2003, at such time and place, either within or without the State of Arizona, as shall be fixed by the Board of Directors or, in the absence of action by the Board, as set forth in the notice given or waiver signed with respect to such meeting pursuant to Section 3.03 below, for the purpose of electing directors and for the transaction of such other business as may properly come before the meeting. If any annual meeting is for any reason not held on the date determined as aforesaid, a deferred annual meeting may thereafter be called and held in lieu thereof, at which the same proceedings may be conducted. If the day fixed for the annual meeting shall be a legal holiday in the State of Arizona such meeting shall be held on the next succeeding business day.

3.02. Special Shareholder Meetings. Special meetings of the shareholders may be held whenever and wherever, either within or without the State of Arizona, called for by or at the direction of the Chairman of the Board, the President, or the Board of Directors. A special meeting of shareholders shall also be called by the President or the Secretary at the written request of the holder or holders of not less than 50% of all outstanding votes entitled to be cast on any matter to be voted on at the meeting. Any such written request by shareholders shall state the purpose or purposes of the proposed meeting, and business to be transacted at any such meeting shall be confined to the purposes stated in the notice thereof and to such additional matters as the chairman of the meeting may rule to be germane to such purposes.

3.03. Notice of Shareholders Meetings.

(a) Required Notice. Notice stating the place, day and hour of any annual or special shareholders meeting shall be given not less than ten (10) nor more than sixty (60) days before the date of the meeting by or at the direction of the person or persons calling the meeting, to each shareholder entitled to vote at such meeting and to any other shareholder entitled to receive notice of the meeting by law or the Articles. Notices to shareholders shall be given in accordance with, and shall be deemed to be effective at the time and in the manner described in, Arizona Revised Statutes Section 10-141. If no designation is made of the place at which an annual or special meeting will be held in the notice for such meeting, the place of the meeting will be at the principal place of business of the corporation.

(b) Adjourned Meeting. If any shareholders' meeting is adjourned to a different date, time, or place, notice need not be given of the new date, time, and place, if the new date, time, and place are announced at the meeting before adjournment. But if a new record date for the adjourned meeting is fixed or must be fixed in accordance with law or these Bylaws, then notice of the adjourned meeting shall be given to those persons who are shareholders as of the new record date and who are entitled to such notice pursuant to Section 3.03(a) above.

(c) Waiver of Notice. Any shareholder may waive notice of a meeting (or any notice of any other action required to be given by the Arizona Business Corporation Act, the corporation's Articles, or these Bylaws), at any time before, during, or after the meeting or other action, by a writing signed by the shareholder entitled to the notice. Each such waiver shall be delivered to the corporation for inclusion in the minutes or filing with the corporate records.

Under certain circumstances, a shareholder's attendance at a meeting may constitute a waiver of notice, unless the shareholder takes certain actions to preserve his/her objections as described in the Arizona Business Corporation Act.

(d) Contents of Notice. The notice of each special shareholders meeting shall include a description of the purpose or purposes for which the meeting is called. Except as required by law or the corporation's Articles, the notice of an annual shareholders meeting need not include a description of the purpose or purposes for which the meeting is called.

3.04. Fixing of Record Date. For the purpose of determining shareholders of any voting group entitled to notice of or to vote at any meeting of shareholders, or shareholders entitled to receive any distribution or dividend, or in order to make a determination of shareholders for any other proper purpose, the Board of Directors may fix in advance a date as the record date. Such record date shall not be more than seventy (70) days prior to the date on which the particular action requiring such determination of shareholders is to be taken. If no record date is so fixed by the Board of Directors, the record date for the determination of shareholders shall be as provided in the Arizona Business Corporation Act.

When a determination of shareholders entitled to notice of or to vote at any meeting of shareholders has been made as provided in this Section, such determination shall apply to any adjournment thereof, unless the Board of Directors fixes a new record date, which it must do if the meeting is adjourned to a date more than one hundred twenty (120) days after the date fixed for the original meeting.

3.05. Shareholder List. The corporation shall make a complete record of the shareholders entitled to notice of each meeting of shareholders thereof, arranged in alphabetical order, listing the address and the number of shares held by each. The list shall be arranged by voting group and within each voting group by class or series of shares. The shareholder list shall be available for inspection by any shareholder, beginning two (2) business days after notice of the meeting is given for which the list was prepared and continuing through the meeting. The list shall be available at the corporation's principal office or at another place identified in the meeting notice in the city where the meeting is to be held. Failure to comply with this section shall not affect the validity of any action taken at the meeting.

3.06. Shareholder Quorum and Voting Requirements.

(a) If the Articles or the Arizona Business Corporation Act provide for voting by a single voting group on a matter, action on that matter is taken when voted upon by that voting group.

(b) If the Articles or the Arizona Business Corporation Act provide for voting by two (2) or more voting groups on a matter, action on that matter is taken only when voted upon by each of those voting groups counted separately.

(c) Shares entitled to vote as a separate voting group may take action on a matter at a meeting only if a quorum of those shares exists with respect to that matter. Unless the Articles or the Arizona Business Corporation Act provide otherwise, a majority of the votes

entitled to be cast on the matter by the voting group constitutes a quorum of that voting group for action on that matter.

(d) Once a share is represented for any purpose at a meeting, it is deemed present for quorum purposes for the remainder of the meeting and for any adjournment of that meeting, unless a new record date is or must be set for that adjourned meeting.

(e) If a quorum exists, action on a matter (other than the election of directors) by a voting group is approved if the votes cast within the voting group favoring the action exceed the votes cast opposing the action, unless the Articles or the Arizona Business Corporation Act require a greater number of affirmative votes.

(f) Voting will be by ballot on any question as to which a ballot vote is demanded prior to the time the voting begins by any person entitled to vote on such question; otherwise, a voice vote will suffice. No ballot or change of vote will be accepted after the polls have been declared closed following the ending of the announced time for voting.

3.07. Proxies. At all meetings of shareholders, a shareholder may vote in person or by proxy duly executed in writing by the shareholder or the shareholder's duly authorized attorney-in-fact. Such proxy shall comply with law and shall be filed with the Secretary of the corporation or other person authorized to tabulate votes before or at the time of the meeting. No proxy shall be valid after eleven (11) months from the date of its execution unless otherwise provided in the proxy. The burden of proving the validity of any undated, irrevocable, or otherwise contested proxy at a meeting of the shareholders will rest with the person seeking to exercise the same. A facsimile appearing to have been transmitted by a shareholder or by such shareholder's duly authorized attorney-in-fact may be accepted as a sufficiently written and executed proxy.

3.08. Voting of Shares. Unless otherwise provided in the Articles or the Arizona Business Corporation Act, each outstanding share entitled to vote shall be entitled to one (1) vote upon each matter submitted to a vote at a meeting of shareholders.

3.09. Voting for Directors. Unless otherwise provided in the Articles, directors are elected by a plurality of the votes cast by the shares entitled to vote in the election at a meeting at which a quorum is present at the time of such vote. As provided by law, shareholders shall be entitled to cumulative voting in the election of directors.

3.10. Election Inspectors. The Board of Directors, in advance of any meeting of the shareholders, may appoint an election inspector or inspectors to act at such meeting (and at any adjournment thereof). If an election inspector or inspectors are not so appointed, the chairman of the meeting may, or upon request of any person entitled to vote at the meeting will, make such appointment. If any person appointed as an inspector fails to appear or to act, a substitute may be appointed by the chairman of the meeting. If appointed, the election inspector or inspectors (acting through a majority of them if there be more than one) will determine the number of shares outstanding, the authenticity, validity, and effect of proxies, the credentials of persons purporting to be shareholders or persons named or referred to in proxies, and the number of shares represented at the meeting in person and by proxy; will receive and count votes, ballots,

and consents and announce the results thereof; will hear and determine all challenges and questions pertaining to proxies and voting; and, in general, will perform such acts as may be proper to conduct elections and voting with complete fairness to all shareholders. No such election inspector need be a shareholder of the corporation.

3.11. Organization and Conduct of Meetings. Each meeting of the shareholders will be called to order and thereafter chaired by the Chairman of the Board of Directors if there is one, or, if not, or if the Chairman of the Board is absent or so requests, then by the President, or if both the Chairman of the Board and the President are unavailable, then by such other officer of the corporation or such shareholder as may be appointed by the Board of Directors. The corporation's Secretary or in his or her absence, an Assistant Secretary will act as secretary of each meeting of the shareholders. If neither the Secretary nor an Assistant Secretary is in attendance, the chairman of the meeting may appoint any person (whether a shareholder or not) to act as secretary for the meeting. After calling a meeting to order, the chairman thereof may require the registration of all shareholders intending to vote in person and the filing of all proxies with the election inspector or inspectors, if one or more have been appointed (or, if not, with the secretary of the meeting). After the announced time for such filing of proxies has ended, no further proxies or changes, substitutions, or revocations of proxies will be accepted. If directors are to be elected, a tabulation of the proxies so filed will, if any person entitled to vote in such election so requests, be announced at the meeting (or adjournment thereof) prior to the closing of the election polls. Absent a showing of bad faith on his or her part, the chairman of a meeting will, among other things, have absolute authority to fix the period of time allowed for the registration of shareholders and the filing of proxies, to determine the order of business to be conducted at such meeting, and to establish reasonable rules for expediting the business of the meeting and preserving the orderly conduct thereof (including any informal, or question and answer portions thereof).

3.12. Shareholder Approval or Ratification. The Board of Directors may submit any contract or act for approval or ratification of the shareholders at a duly constituted meeting of the shareholders. Except as otherwise required by law, if any contract or act so submitted is approved or ratified by a majority of the votes cast thereon at such meeting, the same will be valid and as binding upon the corporation and all of its shareholders as it would be if it were the act of its shareholders.

3.13. Informalities and Irregularities. All informalities or irregularities in any call or notice of a meeting of the shareholders or in the areas of credentials, proxies, quorums, voting, and similar matters, will be deemed waived if no objection is made at the meeting.

3.14. Shareholder Action by Written Consent. Any action required or permitted to be taken at a meeting of the shareholders may be taken without a meeting if one (1) or more consents in writing, setting forth the action so taken, shall be signed by all of the shareholders entitled to vote with respect to the subject matter thereof. The consents shall be delivered to the corporation for inclusion in the minutes or filing with the corporate record. Action taken by consent is effective when the last shareholder signs the consent, unless the consent specifies a different effective date, except that if, by law, the action to be taken requires that notice be given to shareholders who are not entitled to vote on the matter, the effective date shall not be prior to ten (10) days after the corporation shall give such shareholders written notice of the proposed

action, which notice shall contain or be accompanied by the same material that would have been required if a formal meeting had been called to consider the action. A consent signed under this section has the effect of a meeting vote and may be described as such in any document.

IV. BOARD OF DIRECTORS

4.01. General Powers. All corporate powers shall be exercised by or under the authority of, and the business and affairs of the corporation shall be managed under the direction of, the Board of Directors.

4.02. Number, Tenure, and Qualification of Directors. Unless otherwise provided in the Articles of Incorporation, the authorized number of directors shall be not less than one nor more than fifteen. The number of directors in office from time to time shall be within the limits specified above, as prescribed from time to time by resolution adopted by either the shareholders or the Board of Directors. The directors will regularly be elected at each annual meeting of the shareholders, but directors may be elected at any other meeting of the shareholders. Each director shall hold office until the annual meeting of shareholders following his/her election, subject to his/her earlier resignation or removal. However, if a director's term expires, he/she shall continue to serve until his/her successor shall have been elected and qualified, until his/her resignation or removal, or until there is a decrease in the number of directors. Unless required by the Articles, directors do not need to be residents of the State of Arizona or shareholders of the corporation.

4.03. Regular Meetings of the Board of Directors. A regular annual meeting of the Board of Directors is to be held as soon as practicable after the adjournment of each annual meeting of the shareholders, either at the place of the shareholders meeting or at such other place as the directors elected at the shareholders meeting may have been informed of at or prior to the time of their election. Additional regular meetings may be held at regular intervals at such places and at such times as the Board of Directors may determine.

4.04. Special Meetings of the Board of Directors. Special meetings of the Board of Directors may be held whenever and wherever called for by the Chairman of the Board, the President, or the number of directors that would be required to constitute a quorum.

4.05. Notice of, and Waiver of Notice for, Directors Meetings. No notice need be given of regular meetings of the Board of Directors. Notice of the time and place of any special directors meeting shall be given at least 48 hours prior thereto. Notice shall be given in accordance with and shall be deemed to be effective at the time and in the manner described in Arizona Revised Statutes Section 10-141. Any director may waive notice of any meeting and any adjournment thereof at any time before, during, or after it is held. Except as provided in the next sentence below, the waiver must be in writing, signed by the director entitled to the notice, and filed with the minutes or corporate records. The attendance of a director at or participation of a director in a meeting shall constitute a waiver of notice of such meeting, unless the director at the beginning of the meeting (or promptly upon his/her arrival) objects to holding the meeting or transacting business at the meeting, and does not thereafter vote for or assent to action taken at the meeting.

4.06. Director Quorum. A majority of the number of directors prescribed according to Section 4.02 above, or if no number is so prescribed, the number in office immediately before the meeting begins, shall constitute a quorum for the transaction of business at any meeting of the Board of Directors, unless the Articles require a greater number.

4.07. Directors, Manner of Acting.

(a) If a quorum is present when a vote is taken, the affirmative vote of a majority of the directors present shall be the act of the Board of Directors unless the Articles require a greater percentage.

(b) Unless the Articles provide otherwise, any or all directors may participate in a regular or special meeting by, or conduct the meeting through the use of, any means of communication by which all directors participating may simultaneously hear each other during the meeting, in which case, any required notice of the meeting may generally describe the arrangements (rather than or in addition to the place) for the holding thereof. A director participating in a meeting by this means is deemed to be present in person at the meeting.

(c) A director who is present at a meeting of the Board of Directors or a committee of the Board of Directors when corporate action is taken is deemed to have assented to the action taken unless: (1) the director objects at the beginning of the meeting (or promptly upon his/her arrival) to holding it or transacting business at the meeting; or (2) his/her dissent or abstention from the action taken is entered in the minutes of the meeting; or (3) he/she delivers written notice of his/her dissent or abstention to the presiding officer of the meeting before its adjournment or to the corporation before 5:00 p.m. on the next business day after the meeting. The right of dissent or abstention is not available to a director who votes in favor of the action taken.

4.08. Director Action Without a Meeting. Unless the Articles provide otherwise, any action required or permitted to be taken by the Board of Directors at a meeting may be taken without a meeting if the action is taken by unanimous written consent of the Board of Directors as evidenced by one (1) or more written consents describing the action taken, signed by each director and filed with the minutes or corporate records. Action taken by consent is effective when the last director signs the consent, unless the consent specifies a different effective date. A signed consent has the effect of a meeting vote and may be described as such in any document.

4.09. Removal of Directors by Shareholders. The shareholders may remove one (1) or more directors at a meeting called for that purpose if notice has been given that a purpose of the meeting is such removal. The removal may be with or without cause unless the Articles provide that directors may only be removed with cause. If a director is elected by a voting group of shareholders, only the shareholders of that voting group may participate in a shareholder vote to remove him. If less than the entire Board of Directors is to be removed, a director may not be removed if the number of votes sufficient to elect the director under cumulative voting is voted against the director’s removal.

4.10. Board of Director Vacancies.

(a) Unless the Articles provide otherwise, if a vacancy occurs on the Board of Directors, including a vacancy resulting from an increase in the number of directors, either the shareholders or the Board of Directors may fill the vacancy.

(b) If the vacant office was held by a director elected by a voting group of shareholders, only the holders of shares of that voting group are entitled to vote to fill the vacancy if it is filled by the shareholders.

(c) A vacancy that will occur at a specific later date (by reason of resignation effective at a later date) may be filled before the vacancy occurs, but the new director may not take office until the vacancy occurs.

(d) The term of a director elected to fill a vacancy expires at the next shareholders meeting at which directors are elected.

4.11. Director Compensation. Unless otherwise provided in the Articles by resolution of the Board of Directors, each director may be paid his/her expenses, if any, of attendance at each meeting of the Board of Directors or any committee thereof, and may be paid a stated salary as director or a fixed sum for attendance at each meeting of the Board of Directors or any committee thereof, or both. No such payment shall preclude any director from serving the corporation in any capacity and receiving compensation therefor.

4.12. Director Committees.

(a) Creation of Committees. Unless the Articles provide otherwise, the Board of Directors may create one (1) or more committees and appoint members of the Board of Directors to serve on them. Each committee shall have one (1) or more members, who serve at the pleasure of the Board of Directors.

(b) Selection of Members. The creation of a committee and appointment of members to it shall be approved by the greater of (1) a majority of all the directors in office when the action is taken or (2) the number of directors required by the Articles to take such action.

(c) Required Procedures. Sections 4.03 through 4.08 of this Article IV, which govern meetings, action without meetings, notice and waiver of notice, and quorum and voting requirements of the Board of Directors, apply to committees and their members.

(d) Authority. Unless limited by the Articles, each committee may exercise those aspects of the authority of the Board of Directors which the Board of Directors confers upon such committee in the resolution creating the committee, provided, however, that a committee may not: (1) authorize distributions; (2) approve or propose to shareholders action that requires shareholder approval under the Arizona Business Corporation Act; (3) fill vacancies on the Board of Directors or on any of its committees; (4) amend the Articles of Incorporation without shareholder action as provided by law; (5) adopt, amend or repeal these Bylaws; (6) approve a plan of merger not requiring shareholder approval; (7) authorize or approve reacquisition of shares, except according to a formula or method prescribed by the Board of

Directors; (8) authorize or approve the issuance or sale or contract for sale of shares or determine the designation and relative rights, preferences, and limitations of a class or series of shares, except within limits specifically prescribed by the Board of Directors; or (9) fix the compensation of directors for serving on the Board of Directors or any committee of the Board of Directors.

4.13. Director Resignations. Any director or committee member may resign from his or her office at any time by written notice delivered to the Board of Directors, the Chairman of the Board, or the corporation at its known place of business. Any such resignation will be effective upon its receipt unless some later time is therein fixed, and then from that time. The acceptance of a resignation will not be required to make it effective.

V. OFFICERS

5.01. Number of Officers. The officers of the corporation shall be a President, a Secretary, and a Treasurer, each of whom shall be appointed by the Board of Directors. Such other officers and assistant officers as may be deemed necessary, including any Vice Presidents, may be appointed by the Board of Directors. If specifically authorized by the Board of Directors, an officer may appoint one (1) or more other officers or assistant officers. The same individual may simultaneously hold more than one (1) office in the corporation.

5.02. Appointment and Term of Office. The officers of the corporation shall be appointed by the Board of Directors for a term as determined by the Board of Directors. The designation of a specified term grants to the officer no contract rights, and the Board of Directors can remove the officer at any time prior to the termination of such term. If no term is specified, an officer of the corporation shall hold office until he or she resigns, dies, or until he or she is removed in the manner provided by law or in Section 5.03 of this Article V. The regular election or appointment of officers will take place at each annual meeting of the Board of Directors, but elections of officers may be held at any other meeting of the Board.

5.03. Resignation and Removal of Officers. An officer may resign at any time by delivering written notice to the corporation at its known place of business. A resignation is effective when the notice is delivered unless the notice specifies a later effective date or event. Any officer may be removed by the Board of Directors at any time, with or without cause. Such removal shall be without prejudice to the contract rights, if any, of the person so removed. Appointment of an officer shall not of itself create contract rights.

5.04. Duties of Officers. Officers of the corporation shall have authority to perform such duties as may be prescribed from time to time by law, in these Bylaws, or by the Board of Directors, the President, or the superior officer of any such officer. Each officer of the corporation (in the order designated herein or by the Board) will be vested with all of the powers and charged with all of the duties of his or her superior officer in the event of such superior officer's absence, death, or disability.

5.05. Bonds and Other Requirements. The Board of Directors may require any officer to give bond to the corporation (with sufficient surety and conditioned for the faithful

performance of the duties of his or her office) and to comply with such other conditions as may from time to time be required of him or her by the Board of Directors.

5.06. President. Unless otherwise specified by resolution of the Board of Directors, the President shall be the principal executive officer of the corporation and, subject to the control of the Board of Directors, shall supervise and control all of the business and affairs of the corporation and the performance by all of its other officers of their respective duties and in general shall perform all duties incident to the office of President and such other duties as may be prescribed by the Board of Directors from time to time. The President shall, when present, and in the absence of a Chairman of the Board, preside at all meetings of the shareholders and of the Board of Directors. The President will be a proper officer to sign on behalf of the corporation any deed, bill of sale, assignment, option, mortgage, pledge, note, bond, evidence of indebtedness, application, consent (to service of process or otherwise), agreement, indenture, contract, or other instrument, except in each such case where the signing and execution thereof shall be expressly delegated by the Board of Directors or by these Bylaws to some other officer or agent of the corporation, or shall be required by law to be otherwise signed or executed. The President may represent the corporation at any meeting of the shareholders or members of any other corporation, association, partnership, joint venture, or other entity in which the corporation then holds shares of capital stock or has an interest, and may vote such shares of capital stock or other interest in person or by proxy appointed by him or her, provided that the Board of Directors may from time to time confer the foregoing authority upon any other person or persons.

5.07. The Vice-President. If appointed, in the absence of the President or in the event of his/her death or disability, the Vice-President (or in the event there be more than one Vice-President, the Vice-Presidents in the order designated at the time of their election, or in the absence of any such designation, then in the order of their appointment) shall perform the duties of the President, and when so acting, shall have all the powers of and be subject to all the restrictions upon the President. If there is no Vice-President or in the event of the death or disability of all Vice-Presidents, then the Treasurer shall perform such duties of the President in the event of his or her absence, death, or disability. Each Vice-President will be a proper officer to sign on behalf of the corporation any deed, bill of sale, assignment, option, mortgage, pledge, note, bond, evidence of indebtedness, application, consent (to service of process or otherwise), agreement, indenture, contract, or other instrument, except in each such case where the signing and execution thereof shall be expressly delegated by the Board of Directors or by these Bylaws to some other officer or agent of the corporation, or shall be required by law to be otherwise signed or executed. Any Vice-President may represent the corporation at any meeting of the shareholders or members of any other corporation, association, partnership, joint venture, or other entity in which the corporation then holds shares of capital stock or has an interest, and may vote such shares of capital stock or other interest in person or by proxy appointed by him or her, provided that the Board of Directors may from time to time confer the foregoing authority upon any other person or persons. A Vice-President shall perform such other duties as from time to time may be assigned to him/her by the President or by the Board of Directors.

5.08. The Secretary. The Secretary shall: (a) keep the minutes of the proceedings of the shareholders and of the Board of Directors and any committee of the Board of Directors and all unanimous written consents of the shareholders, Board of Directors, and any committee of the Board of Directors in one (1) or more books provided for that purpose; (b) see that all notices are

duly given in accordance with the provisions of these Bylaws or as required by law; (c) be custodian of the corporate records and of any seal of the corporation; (d) when requested or required, authenticate any records of the corporation; (e) keep a register of the address of each shareholder which shall be furnished to the Secretary by such shareholder; and (f) in general perform all duties incident to the office of Secretary and such other duties as from time to time may be assigned to him/her by the President or by the Board of Directors. Except as may otherwise be specifically provided in a resolution of the Board of Directors, the Secretary will be a proper officer to take charge of the corporation's stock transfer books and to compile the voting record pursuant to Section 3.05 above, and to impress the corporation's seal, if any, on any instrument signed by the President, any Vice President, or any other duly authorized person, and to attest to the same. In the absence of the Secretary, a secretary pro tempore may be chosen by the directors or shareholders as appropriate to perform the duties of the Secretary.

5.09. The Treasurer. The Treasurer shall: (a) have charge and custody of and be responsible for all funds and securities of the corporation; (b) receive and give receipts for moneys due and payable to the corporation from any source whatsoever, and deposit all such moneys in the name of the corporation in such bank, trust companies, or other depositories as shall be selected by the Board of Directors or any proper officer; (c) keep full and accurate accounts of receipts and

disbursements in books and records of the corporation; and (d) in general perform all of the duties incident to the office of Treasurer and such other duties as from time to time may be assigned to him/her by the President or by the Board of Directors. The Treasurer will render to the President, the directors, and the shareholders at proper times an account of all his or her transactions as Treasurer and of the financial condition of the corporation. The Treasurer shall be responsible for preparing and filing such financial reports, financial statements, and returns as may be required by law.

5.10. Assistant Secretaries and Assistant Treasurers. The Assistant Secretaries and the Assistant Treasurers, when authorized by the Board of Directors, may sign with the President or a Vice-President certificates for shares of the corporation, the issuance of which shall have been authorized by a resolution of the Board of Directors. The Assistant Secretaries and Assistant Treasurers, in general, shall perform such duties as shall be assigned to them by the Secretary or the Treasurer, respectively, or by the President or the Board of Directors.

5.11. Chairman of the Board. The Board of Directors may elect a Chairman to serve as a general executive officer of the corporation, and, if specifically designated as such by the Board of Directors, as the chief executive officer of the corporation. If elected, the Chairman will preside at all meetings of the Board of Directors and be vested with such other powers and duties as the Board of Directors may from time to time delegate to him or her.

5.12. Salaries. The salaries of the officers of the corporation may be fixed from time to time by the Board of Directors or (except as to the President's own) left to the discretion of the President. No officer will be prevented from receiving a salary by reason of the fact that he or she is also a director of the corporation.

5.13. Additional Appointments. In addition to the officers contemplated in this Article V, the Board of Directors may appoint other agents of the corporation with such authority to perform such duties as may be prescribed from time to time by the Board of Directors.

VI. CERTIFICATES FOR SHARES AND THEIR TRANSFER

6.01. Certificates for Shares.

(a) Content. Certificates representing shares of the corporation shall, at a minimum, state on their face the name of the issuing corporation and that it is formed under the laws of the State of Arizona, the name of the person to whom issued, and the number and class of shares and the designation of the series, if any, the certificate represents. Such certificates shall be signed (either manually or by facsimile to the extent allowable by law) by one or more officers of the corporation, as determined by the Board of Directors, or, if no such determination is made, by any of the Chairman of the Board (if any), the President, any Vice-President, the Secretary, or the Treasurer of the corporation, and may be sealed with a corporate seal or a facsimile thereof. Each certificate for shares shall be consecutively numbered or otherwise identified and will exhibit such information as may be required by law. If a supply of unissued certificates bearing the facsimile signature of a person remains when that person ceases to hold the office of the corporation indicated on such certificates or ceases to be the transfer agent or registrar of the corporation, they may still be issued by the corporation and countersigned, registered, issued, and delivered by the corporation's transfer agent and/or registrar thereafter, as though such person had continued to hold the office indicated on such certificate.

(b) Legend as to Class or Series. If the corporation is authorized to issue different classes of shares or different series within a class, the designations, relative rights, preferences, and limitations applicable to each class and the variations in rights, preferences, and limitations determined for each series (and the authority of the Board of Directors to determine variations for future series) shall be summarized on the front or back of each certificate. Alternatively, each certificate may state conspicuously on its front or back that the corporation will furnish a shareholder this information on request in writing and without charge.

(c) Shareholder List. The name and address of the person to whom shares are issued, with the number of shares and date of issue, shall be entered on the stock transfer books of the corporation.

(d) Lost Certificates. In the event of the loss, theft, or destruction of any certificate representing shares of the corporation or of any predecessor corporation, the corporation may issue (or, in the case of any such shares as to which a transfer agent and/or registrar have been appointed, may direct such transfer agent and/or registrar to countersign, register, and issue) a new certificate, and cause the same to be delivered to the registered owner of the shares represented thereby; provided that such owner shall have submitted such evidence showing the circumstances of the alleged loss, theft, or destruction, and his, her, or its ownership of the certificate, as the corporation considers satisfactory, together with any other facts that the corporation considers pertinent; and further provided that, if so required by the corporation, the owner shall provide a bond or other indemnity in form and amount satisfactory to the corporation (and to its transfer agent and/or registrar, if applicable).

6.02. Registration of the Transfer of Shares. Registration of the transfer of shares of the corporation shall be made only on the stock transfer books of the corporation. In order to register a transfer, the record owner shall surrender the shares to the corporation for cancellation,

properly endorsed by the appropriate person or persons with reasonable assurances that the endorsements are genuine and effective. Unless the corporation has established a procedure by which a beneficial owner of shares held by a nominee is to be recognized by the corporation as the owner, the corporation will be entitled to treat the registered owner of any share of the capital stock of the corporation as the absolute owner thereof and, accordingly, will not be bound to recognize any beneficial, equitable, or other claim to, or interest in, such share on the part of any other person, whether or not it has notice thereof, except as may expressly be provided by applicable law.

6.03. Shares Without Certificates. The Board of Directors may authorize the issuance of uncertificated shares by the corporation and may prescribe procedures for the issuance and registration of transfer thereof and with respect to such other matters as the Board of Directors shall deem necessary or appropriate.

VII. DISTRIBUTIONS

7.01. Distributions. Subject to such restrictions or requirements as may be imposed by applicable law or the corporation's Articles or as may otherwise be binding upon the corporation, the Board of Directors may from time to time declare, and the corporation may pay or make, dividends or other distributions to its shareholders.

VIII. CORPORATE SEAL

8.01. Corporate Seal. The Board of Directors may provide for a corporate seal of the corporation that will have inscribed thereon any designation including the name of the corporation, Arizona as the state of incorporation, the year of incorporation, and the words “Corporate Seal.”

IX. AMENDMENTS

9.01. Amendments. The corporation’s Board of Directors may amend or repeal the corporation’s Bylaws unless:

(1) the Articles or the Arizona Business Corporation Act reserve this power exclusively to the shareholders in whole or part; or

(2) the shareholders in adopting, amending, or repealing a particular Bylaw provide expressly that the Board of Directors may not amend or repeal that Bylaw.

The corporation’s shareholders may amend or repeal the corporation’s Bylaws even though the Bylaws may also be amended or repealed by its Board of Directors.

Exhibit 4.2

ARCADIA BIOSCIENCES, INC.

INVESTORS' RIGHTS AGREEMENT

March 28, 2014

TABLE OF CONTENTS

TABLE OF CONTENTS
(continued)

INVESTORS' RIGHTS AGREEMENT

THIS INVESTORS' RIGHTS AGREEMENT is made as of the 28th day of March 2014, by and among Arcadia Biosciences, Inc., an Arizona corporation (the "**Company**"), and each of the investors listed on Schedule A hereto, each of which is referred to in this Agreement as an "**Investor**".

RECITALS

WHEREAS, the Company and the Investors are parties to the Series D Preferred Stock Purchase Agreement of even date herewith (the "**Purchase Agreement**"); and

WHEREAS, in order to induce the Company to enter into the Purchase Agreement and to induce certain of the Investors to invest funds in the Company pursuant to the Purchase Agreement, the Investors and the Company hereby agree that this Agreement shall govern the rights of the Investors to cause the Company to register shares of Common Stock issuable to the Investors, to receive certain information from the Company, and to participate in future equity offerings by the Company, and shall govern certain other matters as set forth in this Agreement;

NOW, THEREFORE, the parties hereby agree as follows:

1. Definitions. For purposes of this Agreement:

1.1. "**Affiliate**" means, with respect to any specified Person, any other Person who, directly or indirectly, controls, is controlled by or is under common control with such Person, including without limitation any general partner, managing member, officer or director of such Person or any venture capital fund now or hereafter existing that is controlled by or under common control with one or more general partners or managing members of, or shares the same management company with, such Person.

1.2. "**Common Stock**" means shares of the Company's common stock, no par value.

1.3. "**Damages**" means any loss, damage, claim or liability (joint or several) to which a party hereto may become subject under the Securities Act, the Exchange Act, or other federal or state law, insofar as such loss, damage, claim or liability (or any action in respect thereof) arises out of or is based upon: (i) any untrue statement or alleged untrue statement of a material fact contained in any registration statement of the Company, including any preliminary prospectus or final prospectus contained therein or any amendments or supplements thereto; (ii) an omission or alleged omission to state therein a material fact required to be stated therein, or necessary to make the statements therein not misleading; or (iii) any violation or alleged violation by the indemnifying party (or any of its agents or Affiliates) of the Securities Act, the Exchange Act, any state securities law, or any rule or regulation promulgated under the Securities Act, the Exchange Act, or any state securities law.

1.4. "**Derivative Securities**" means any securities or rights convertible into, or exercisable or exchangeable for (in each case, directly or indirectly), Common Stock, including options and warrants.

1.5. "**Exchange Act**" means the Securities Exchange Act of 1934, as amended, and the rules and regulations promulgated thereunder.

1.6. "**Excluded Registration**" means (i) a registration relating to the sale of securities to employees of the Company or a subsidiary pursuant to a stock option, stock purchase, or similar plan;

(ii) a registration relating to an SEC Rule 145 transaction; (iii) a registration on any form that does not include substantially the same information as would be required to be included in a registration statement covering the sale of the Registrable Securities (as defined below); or (iv) a registration in which the only Common Stock being registered is Common Stock issuable upon conversion of debt securities that are also being registered.

1.7. "**Form S-1**" means such form under the Securities Act as in effect on the date hereof or any successor registration form under the Securities Act subsequently adopted by the SEC.

1.8. "**Form S-3**" means such form under the Securities Act as in effect on the date hereof or any registration form under the Securities Act subsequently adopted by the SEC that permits incorporation of substantial information by reference to other documents filed by the Company with the SEC.

1.9. "**GAAP**" means generally accepted accounting principles in the United States.

1.10. "**Holder**" means any holder of Registrable Securities who is a party to this Agreement.

1.11. "**Immediate Family Member**" means a child, stepchild, grandchild, parent, stepparent, grandparent, spouse, registered domestic partner, sibling, mother-in-law, father-in-law, son-in-law, daughter-in-law, brother-in-law, or sister-in-law, including adoptive relationships, of a natural person referred to herein.

1.12. "**Initiating Holders**" means, collectively, Holders who properly initiate a registration request under this Agreement.

1.13. "**IPO**" means the Company's first underwritten public offering of its Common Stock under the Securities Act.

1.14. "**IPO Lock-Up Period**" means the period from the date of completion of the IPO until the end of any "lock-up" period during which any Holders agree to be subject to any underwriter's lock-up or other contractual restriction on the sale of Registrable Securities in connection with such IPO.

1.15. "**New Securities**" means, collectively, equity securities of the Company, whether or not currently authorized, as well as rights, options, or warrants to purchase such equity securities, or securities of any type whatsoever that are, or may become, convertible or exchangeable into or exercisable for such equity securities.

1.16. "**Person**" means any individual, corporation, partnership, trust, limited liability company, association or other entity.

1.17. "**Preferred Stock**" means, collectively, the Series A Preferred Stock, Series B Preferred Stock, Series C Preferred Stock and Series D Preferred Stock, no par value, of the Company.

1.18. "**Registrable Securities**" means (i) the Common Stock issuable or issued upon conversion of the Series D Preferred Stock or upon exercise of the Warrants (as defined below); (ii) any Common Stock, or any Common Stock issuable or issued upon conversion and/or exercise of any other securities of the Company, owned or held by an Investor or acquired by an Investor after the date hereof; and (iii) any Series D Preferred Stock and any Common Stock issued as (or issuable upon the conversion or exercise of any warrant, right, or other security that is issued as) a dividend or other distribution with

respect to, or in exchange for or in replacement of, the shares referenced in clauses (i) and (ii) above; excluding in all cases, however, any Registrable Securities sold by a Person in a transaction in which the applicable rights under this Agreement are not assigned pursuant to Section 5.1, and excluding for purposes of Section 2 any shares for which registration rights have terminated pursuant to Section 2.13 of this Agreement.

1.19. "**Registrable Securities then outstanding**" means the number of shares determined by adding the number of shares of outstanding Common Stock that are Registrable Securities (if any) and the number of shares of Common Stock issuable (directly or indirectly) pursuant to then exercisable and/or convertible securities that are Registrable Securities.

1.20. "**Required Registration Amount**" means an amount of gross proceeds from a registered public offering that is reasonably anticipated to be equivalent in value to the aggregate amount paid by the selling Holders to the Company under the Purchase Agreement.

1.21. "**Restricted Securities**" means the securities of the Company required to bear the legend set forth in Section 2.12(b) hereof.

1.22. "**SEC**" means the Securities and Exchange Commission.

1.23. "**SEC Rule 144**" means Rule 144 promulgated by the SEC under the Securities Act.

1.24. "**SEC Rule 145**" means Rule 145 promulgated by the SEC under the Securities Act.

1.25. "**Securities Act**" means the Securities Act of 1933, as amended, and the rules and regulations promulgated thereunder.

1.26. "**Selling Expenses**" means all underwriting discounts, selling commissions, and stock transfer taxes applicable to the sale of Registrable Securities, and fees and disbursements of counsel for any Holder, except for the fees and disbursements of the Selling Holder Counsel borne and paid by the Company as provided in Section 2.6.

1.27. "**Series D Preferred Stock**" means shares of the Company's Series D Preferred Stock, no par value.

1.28. "**Warrants**" shall mean warrants to purchase up to an aggregate maximum of 5,276,885 shares of Common Stock (appropriately adjusted for any stock split, dividend, combination or other recapitalization effected after the date hereof) held by the Investors.

2. Registration Rights. The Company covenants and agrees as follows:

2.1. Demand Registration.

(a) Form S-1 Demand. If at any time after the earlier of (i) the seven (7) year anniversary of this Agreement, and (ii) one hundred eighty (180) days after the effective date of the registration statement for the IPO, the Company receives a request from Holders of at least fifty percent (50%) of the Registrable Securities then outstanding that the Company file a Form S-1 registration statement with respect to at least twenty percent (20%) of the Registrable Securities then outstanding, or a lesser percent if the anticipated aggregate

offering price, net of Selling Expenses, would exceed $5 million, then the Company shall (x) within ten (10) days after the date such request is given, give notice thereof (the "**Demand Notice**") to all Holders other than the Initiating Holders; (y) as soon as practicable, and in any event within sixty (60) days after the date such request is given by the Initiating Holders, file a Form S-1 registration statement under the Securities Act covering all Registrable Securities that the Initiating Holders requested to be registered and any additional Registrable Securities requested to be included in such registration by any other Holders, as specified by notice given by each such Holder to the Company within twenty (20) days of the date the Demand Notice is given, and in each case, subject to the limitations of Section 2.1(c) and Section 2.3., and (z) use its best efforts to cause such registration statement to be declared effective by the SEC as soon as practicable but in no event later than one hundred eighty (180) days after such request.

(b) Form S-3 Demand. If at any time when it is eligible to use a Form S-3 registration statement, the Company receives a request from Holders of at least twenty percent (20%) of the Registrable Securities then outstanding that the Company file a Form S-3 registration statement with respect to outstanding Registrable Securities of such Holders having an anticipated aggregate offering price, net of Selling Expenses, of at least $1 million, then the Company shall (i) within ten (10) days after the date such request is given, give a Demand Notice to all Holders other than the Initiating Holders; and (ii) as soon as practicable, and in any event within forty-five (45) days after the date such request is given by the Initiating Holders, file a Form S-3 registration statement under the Securities Act covering all Registrable Securities requested to be included in such registration by

any other Holders, as specified by notice given by each such Holder to the Company within twenty (20) days of the date the Demand Notice is given, and in each case, subject to the limitations of Section 2.1(c) and Section 2.3.

(c) Notwithstanding the foregoing obligations, if the Company furnishes to Holders requesting a registration pursuant to this Section 2.1 a certificate signed by the Company's chief executive officer stating that in the good faith judgment of the Company's Board of Directors it would be materially detrimental to the Company and its stockholders for such registration statement to either become effective or remain effective for as long as such registration statement otherwise would be required to remain effective, because such action would (i) materially interfere with a significant acquisition, corporate reorganization, or other similar transaction involving the Company; (ii) require premature disclosure of material information that the Company has a bona fide business purpose for preserving as confidential; or (iii) render the Company unable to comply with requirements under the Securities Act or Exchange Act, then the Company shall have the right to defer taking action with respect to such filing, and any time periods with respect to filing or effectiveness thereof shall be tolled correspondingly, for a period of not more than sixty (60) days after the request of the Initiating Holders is given; provided, however, that the Company may not invoke this right more than once in any twelve (12) month period; and provided further that the Company shall not register any securities for its own account or that of any other stockholder during such sixty (60) day period other than an Excluded Registration.

(d) The Company shall not be obligated to effect, or to take any action to effect, any registration pursuant to Section 2.1(a) (i) during the period that is sixty (60) days before the Company's good faith estimate of the date of filing of, and ending on a date that is one hundred eighty (180) days after the effective date of, a Company-initiated registration, provided, that the Company is actively employing in good faith commercially reasonable efforts to cause such registration statement to become effective; (ii) after the Company has effected one registration pursuant to Section 2.1(a), and a second registration pursuant to Section 2.1(a) if the Registrable Securities (on an as-converted basis, following application of the conversion

adjustments contained in the Company's Articles of Incorporation) total ten percent (10%) or more of the shares of Common Stock outstanding immediately after the closing of the IPO; or (iii) if the Initiating Holders propose to dispose of shares of Registrable Securities that may be immediately registered on Form S-3 pursuant to a request made pursuant to Section 2.1(b). The Company shall not be obligated to effect, or to take any action to effect, any registration pursuant to Section 2.1(b) (x) during the period that is thirty (30) days before the Company's good faith estimate of the date of filing of, and ending on a date that is ninety (90) days after the effective date of, a Company-initiated registration, provided, that the Company is actively employing in good faith commercially reasonable efforts to cause such registration statement to become effective; or (y) if the Company has effected two (2) registrations pursuant to Section 2.1(b) within the twelve (12) month period immediately preceding the date of such request. A registration shall not be counted as "effected" for purposes of this Section 2.1(d) until such time as such registration statement has been declared effective by the SEC, unless the Initiating Holders withdraw their request for such registration (other than as a result of information concerning the business or financial condition of the Company which is made known to the Investors after the date on which such registration was requested), and elect not to pay the registration expenses therefor, and forfeit their right to one demand registration statement pursuant to Section 2.6, in which case such withdrawn registration statement shall be counted as "effected" for purposes of this Section 2.1(d).

2.2. Company Registration. If the Company proposes to register (including, for this purpose, a registration effected by the Company for stockholders other than the Holders) any of its securities under the Securities Act in connection with the public offering of such securities solely for cash (other than in an Excluded Registration), the Company shall, at such time, promptly give each Holder written notice of such registration. Upon the written request of each Holder given within twenty (20) days after such notice is given by the Company, the Company shall, subject to the provisions of Section 2.3, cause to be registered under the Securities Act all of the Registrable Securities that each such Holder has requested to be included in such registration. The Company shall have the right to terminate or withdraw any registration initiated by it under this Section 2.2 before the effective date of such registration, whether or not any Holder has elected to include Registrable Securities in such registration. The expenses (other than Selling Expenses) of such withdrawn registration shall be borne by the Company in accordance with Section 2.6.

2.3. Underwriting Requirements.

(a) If, pursuant to Section 2.1, the Initiating Holders intend to distribute the Registrable Securities covered by their request by means of an underwriting, they shall so advise the Company as a part of their request made pursuant to Section 2.1, and the Company shall include such information in the Demand Notice. The underwriter(s) will be selected by the Initiating Holders, subject only to the reasonable approval of the Company. In such event, the right of any Holder to include such Holder's Registrable Securities in such registration shall be conditioned upon such Holder's participation in such underwriting and the inclusion of such Holder's Registrable Securities in the underwriting to the extent provided herein. All Holders proposing to distribute their securities through such underwriting shall (together with the Company as provided in Section 2.4(e)) enter into an underwriting agreement in customary form with the underwriter(s) selected for such underwriting. Notwithstanding any other provision of this Section 2.3, if the managing underwriter(s) advise(s) the Company and the Initiating Holders in writing that in its opinion marketing factors require a limitation on the number of shares to be underwritten, then the Company shall so advise all Holders of Registrable Securities that otherwise would be underwritten pursuant hereto, and the number of Registrable Securities that may be included in the underwriting shall be allocated among such Holders of Registrable

Securities, including the Initiating Holders, in proportion (as nearly as practicable) to the number of Registrable Securities owned by each Holder or in such other proportion as shall mutually be agreed to by all such selling Holders; provided, however, that the number of Registrable Securities held by the Investors to be included in such underwriting shall not be reduced unless all other securities are first entirely excluded from the underwriting. To facilitate the allocation of shares in accordance with the above provisions, the Company or the underwriters may round the number of shares allocated to any Holder to the nearest one hundred (100) shares.

(b) In connection with any offering involving an underwriting of shares of the Company's capital stock pursuant to Section 2.2, the Company shall not be required to include any of the Holders' Registrable Securities in such underwriting unless the Holders accept the terms of the underwriting as agreed upon between the Company and its underwriters, and then only in such quantity as the underwriters in their sole discretion determine will not jeopardize the success of the offering by the Company. If the total number of securities, including Registrable Securities, requested by stockholders to be included in such offering exceeds the number of securities to be sold (other than by the Company) that the underwriters in their reasonable discretion determine is compatible with the success of the offering, then the Company shall be required to include in the offering only

that number of such securities, including Registrable Securities, which the underwriters and the Company in their sole discretion determine will not jeopardize the success of the offering. If the underwriters determine that less than all of the Registrable Securities requested to be registered can be included in such offering, then the Registrable Securities that are included in such offering shall be allocated among the selling Holders in proportion (as nearly as practicable) to the number of Registrable Securities owned by each selling Holder or in such other proportions as shall mutually be agreed to by all such selling Holders. To facilitate the allocation of shares in accordance with the above provisions, the Company or the underwriters may round the number of shares allocated to any Holder to the nearest one hundred (100) shares. Notwithstanding the foregoing, in no event shall (i) the number of Registrable Securities held by the Investors and included in the offering be reduced unless all other securities (other than securities to be sold by the Company) are first entirely excluded from the offering; or (ii) the number of Registrable Securities included in the offering be reduced below thirty percent (30%) of the total number of securities included in such offering, unless such offering is the IPO, in which case the selling Holders may be excluded further if the underwriters make the determination described above and no other stockholder's securities are included in such offering. For purposes of the provision in this Section 2.3(b) concerning apportionment, for any selling Holder that is an investment fund, partnership, limited liability company, or corporation, the partners, members, retired partners, retired members, stockholders, and Affiliates of such Holder, or the estates and Immediate Family Members of any such partners, retired partners, members, and retired members and any trusts for the benefit of any of the foregoing Persons, shall be deemed to be a single "selling Holder," and any pro rata reduction with respect to such "selling Holder" shall be based upon the aggregate number of Registrable Securities owned by all Persons included in such "selling Holder," as defined in this sentence.

(c) Notwithstanding anything herein to the contrary, whenever the Company shall effect any registration of securities under the Securities Act (whether pursuant to Sections 2.1 or 2.2) in an IPO (or in a follow-on underwritten offering during the IPO Lock-Up Period) which includes securities held by any stockholder of the Company (including in the case of a combined primary and secondary offering), the Holders shall have the right to include in each such registration up to fifty percent (50%) of the secondary securities so to be registered, until the number of the Registrable Securities to be registered by such selling Holders would represent an amount of anticipated proceeds equal to the Required Registration Amount.

Thereafter the secondary securities that are included in any such offering shall be allocated pro rata among the selling stockholders in proportion (as nearly as practicable) to their respective ownership percentages of the Company's capital stock (excluding the Registrable Securities already covered by such registration) or in such other proportions as shall mutually be agreed to by all such selling stockholders.

(d) For purposes of Section 2.1, a registration shall not be counted as "effected" if, as a result of an exercise of the underwriter's cutback provisions in Section 2.3(a), fewer than fifty percent (50%) of the total number of Registrable Securities that Holders have requested to be included in such registration statement are actually included.

2.4. Obligations of the Company. Whenever required under this Section 2 to effect the registration of any Registrable Securities, the Company shall, as expeditiously as reasonably possible:

(a) prepare and file with the SEC a registration statement with respect to such Registrable Securities and use commercially reasonable efforts to cause such registration statement to become effective and, upon the request of the Holders of at least 70% of the Registrable Securities registered thereunder, keep such registration statement effective for a period of up to one hundred twenty (120) days or, if earlier, until the distribution contemplated in the registration statement has been completed; provided, however, that (i) such one hundred twenty (120) day period shall be extended for a period of time equal to the period the Holder refrains, at the request of an underwriter of Common Stock (or other securities) of the Company, from selling any securities included in such registration, and (ii) in the case of any registration of Registrable Securities on Form S-3 that are intended to be offered on a continuous or delayed basis, subject to compliance with applicable SEC rules, such one hundred twenty (120) day period shall be extended for up to one hundred eighty (180) days, if necessary, to keep the registration statement effective until all such Registrable Securities are sold;

(b) prepare and file with the SEC such amendments and supplements to such registration statement, and the prospectus used in connection with such registration statement, as may be necessary to comply with the Securities Act with respect to the disposition of all securities covered by such registration statement;

(c) furnish to the selling Holders such numbers of copies of a prospectus, including a preliminary prospectus, as required by the Securities Act, and such other documents as the Holders may reasonably request in order to facilitate the disposition of their Registrable Securities;

(d) use its commercially reasonable efforts to register and qualify the securities covered by such registration statement under such other securities or blue-sky laws of such jurisdictions as shall be reasonably requested by the selling Holders; provided that the Company shall not be required to qualify to do business or to file a general consent to service of process in any such states or jurisdictions, unless the Company is already subject to service in such jurisdiction and except as may be required by the Securities Act;

(e) in the event of any underwritten public offering, enter into and perform its obligations under an underwriting agreement, in usual and customary form, with the underwriter(s) of such offering;

(f) cause all such Registrable Securities covered by such registration statement to be listed on a national securities exchange and each securities exchange and trading system (if any) on which similar securities issued by the Company are then listed;

(g) notify each Holder holding Registrable Securities covered by such registration statement, at any time when a prospectus relating thereto is required to be delivered under the Securities Act, of the happening of any event as a result of which the prospectus included in such registration statement, as then in effect, includes an untrue statement of a material fact or omits to state a material fact required to be stated therein or necessary to make the statements therein not misleading in the light of the circumstances then existing, and prepare and furnish to such Holders any supplement or amendment necessary so that the supplemented or amended prospectus no longer includes such untrue or misleading statements or omissions of material fact;

(h) provide a transfer agent and registrar for all Registrable Securities registered pursuant to this Agreement and a CUSIP number for all such Registrable Securities, in each case not later than the effective date of such registration;

(i) promptly make available for inspection by the selling Holders, any managing underwriter(s) participating in any disposition pursuant to such registration statement, and any attorney or accountant or other agent retained by any such underwriter or selected by the selling Holders, all financial and other records, pertinent corporate documents, and properties of the Company, and cause the Company's officers, directors, employees, and independent accountants to supply all information reasonably requested by any such seller, underwriter, attorney, accountant, or agent, in each case, as necessary or advisable to verify the accuracy of the information in such registration statement and to conduct appropriate due diligence in connection therewith;

(j) notify each selling Holder, promptly after the Company receives notice thereof, of the time when such registration statement has been declared effective or a supplement to any prospectus forming a part of such registration statement has been filed; and

(k) after such registration statement becomes effective, notify each selling Holder of any request by the SEC that the Company amend or supplement such registration statement or prospectus.

2.5. Furnish Information. It shall be a condition precedent to the obligations of the Company to take any action pursuant to this Section 2 with respect to the Registrable Securities of any selling Holder that such Holder shall furnish to the Company such information regarding itself, the Registrable Securities held by it, and the intended method of disposition of such securities as is reasonably required to effect the registration of such Holder's Registrable Securities.

2.6. Expenses of Registration. All expenses (other than Selling Expenses) incurred in connection with registrations, filings, or qualifications pursuant to Section 2, including all registration, filing, and qualification fees; printers' and accounting fees; fees and disbursements of counsel for the Company; and the reasonable fees and disbursements of one counsel for the selling Holders ("**Selling Holder Counsel**"), shall be borne and paid by the Company; provided, however, that the Company shall not be required to pay for any expenses of any registration proceeding begun pursuant to Section 2.1 if the registration request is subsequently withdrawn at the request of the Holders of at least 70% of the Registrable Securities to be registered (in which case all selling Holders shall bear such expenses pro rata based upon the number of Registrable Securities that were to be included in the withdrawn registration),

unless the Holders of at least 70% of the Registrable Securities agree to forfeit their right to one registration pursuant to Section 2.1(a) or Section 2.1(b), as the case may be; provided further that if, at the time of such withdrawal, the Holders shall have learned of a material adverse change in the condition, business, or prospects of the Company from that known to the Holders at the time of their request and have withdrawn the request with reasonable promptness after learning of such information then the Holders shall not be required to pay any of such expenses and shall not forfeit their right to one registration pursuant to Section 2.1(a) or Section 2.1(b). All Selling Expenses relating to Registrable Securities registered pursuant to this Section 2 shall be borne and paid by the Holders pro rata on the basis of the number of Registrable Securities registered on their behalf.

2.7. Delay of Registration. No Holder shall have any right to obtain or seek an injunction restraining or otherwise delaying any registration pursuant to this Agreement as the result of any controversy that might arise with respect to the interpretation or implementation of this Section 2.

2.8. Indemnification. If any Registrable Securities are included in a registration statement under this Section 2:

(a) To the extent permitted by law, the Company will indemnify and hold harmless each selling Holder, and the partners, members, managers, officers, directors, and stockholders of each such Holder; legal counsel and accountants for each such Holder; any underwriter (as defined in the Securities Act) for each such Holder; and each Person, if any, who controls such Holder or underwriter within the meaning of the Securities Act or the Exchange Act, against any Damages, and the Company will pay to each such Holder, underwriter, controlling Person, or other aforementioned Person any legal or other expenses reasonably incurred thereby in connection with investigating or defending any claim or proceeding from which Damages may result, as such expenses are incurred; provided, however, that the indemnity agreement contained in this Section 2.8(a) shall not apply to amounts paid in settlement of any such claim or proceeding if such settlement is effected without the consent of the Company, which consent shall not be unreasonably withheld, nor shall the Company be liable for any Damages to the extent that they arise out of or are based upon actions or omissions made in reliance upon and in conformity with written information furnished by or on behalf of any such Holder, underwriter, controlling Person, or other aforementioned Person expressly for use in connection with such registration.

(b) To the extent permitted by law, each selling Holder, severally and not jointly, will indemnify and hold harmless the Company, and each of its directors, each of its officers who has signed the registration statement, each Person (if any) who controls the Company within the meaning of the Securities Act, legal counsel and accountants for the Company, any underwriter (as defined in the Securities Act), any other Holder selling securities in such registration statement, and any controlling Person of any such underwriter or other Holder, against any Damages, in each case only to the extent that such Damages arise out of or are based upon actions or omissions made in reliance upon and in conformity with written information furnished by or on behalf of such selling Holder expressly for use in connection with such registration; and each such selling Holder will pay to the Company and each other aforementioned Person any legal or other expenses reasonably incurred thereby in connection with investigating or defending any claim or proceeding from which Damages may result, as such expenses are incurred; provided, however, that the indemnity agreement contained in this Section 2.8(b) shall not apply to amounts paid in settlement of any such claim or proceeding if such settlement is effected without the consent of the Holder, which consent shall not be unreasonably withheld; and provided further that in no event shall the aggregate amounts payable by any Holder by way of indemnity or contribution under Sections 2.8(b) and 2.8(d) exceed the proceeds

from the offering received by such Holder (net of any Selling Expenses paid by such Holder), except in the case of fraud or willful misconduct by such Holder.

(c) Promptly after receipt by an indemnified party under this Section 2.8 of notice of the commencement of any action (including any governmental action) for which a party may be entitled to indemnification hereunder, such indemnified party will, if a claim in respect thereof is to be made against any indemnifying party under this Section 2.8, give the indemnifying party notice of the commencement thereof. The indemnifying party shall have the right to participate in such action and, to the extent the indemnifying party so desires, participate jointly with any other indemnifying party to which notice has been given, and to assume the defense thereof with counsel mutually satisfactory to the parties; provided, however, that an indemnified party (together with all other indemnified parties that may be represented without conflict by one counsel) shall have the right to retain one separate counsel, with the fees and expenses to be paid by the indemnifying party, if representation of such indemnified party by the

counsel retained by the indemnifying party would be inappropriate due to actual or potential differing interests between such indemnified party and any other party represented by such counsel in such action. The failure to give notice to the indemnifying party within a reasonable time of the commencement of any such action shall relieve such indemnifying party of any liability to the indemnified party under this Section 2.8, to the extent that such failure materially prejudices the indemnifying party's ability to defend such action. The failure to give notice to the indemnifying party will not relieve it of any liability that it may have to any indemnified party otherwise than under this Section 2.8.

(d) To provide for just and equitable contribution to joint liability under the Securities Act in any case in which either (i) any party otherwise entitled to indemnification hereunder makes a claim for indemnification pursuant to this Section 2.8 but it is judicially determined (by the entry of a final judgment or decree by a court of competent jurisdiction and the expiration of time to appeal or the denial of the last right of appeal) that such indemnification may not be enforced in such case, notwithstanding the fact that this Section 2.8 provides for indemnification in such case, or (ii) contribution under the Securities Act may be required on the part of any party hereto for which indemnification is provided under this Section 2.8, then, and in each such case, such parties will contribute to the aggregate losses, claims, damages, liabilities, or expenses to which they may be subject (after contribution from others) in such proportion as is appropriate to reflect the relative fault of each of the indemnifying party and the indemnified party in connection with the statements, omissions, or other actions that resulted in such loss, claim, damage, liability, or expense, as well as to reflect any other relevant equitable considerations. The relative fault of the indemnifying party and of the indemnified party shall be determined by reference to, among other things, whether the untrue or allegedly untrue statement of a material fact, or the omission or alleged omission of a material fact, relates to information supplied by the indemnifying party or by the indemnified party and the parties' relative intent, knowledge, access to information, and opportunity to correct or prevent such statement or omission; provided, however, that, in any such case, (x) no Holder will be required to contribute any amount in excess of the public offering price of all such Registrable Securities offered and sold by such Holder pursuant to such registration statement, and (y) no Person guilty of fraudulent misrepresentation (within the meaning of Section 11(f) of the Securities Act) will be entitled to contribution from any Person who was not guilty of such fraudulent misrepresentation; and provided further that in no event shall a Holder's liability pursuant to this Section 2.8(d), when combined with the amounts paid or payable by such Holder pursuant to Section 2.8(b), exceed the proceeds from the offering received by such Holder (net of any Selling Expenses paid by such Holder), except in the case of willful misconduct or fraud by such Holder.

(e) The obligations of the Company and Holders under this Section 2.8 shall survive the completion of any offering of Registrable Securities in a registration under this Section 2, and otherwise shall survive the termination of this Agreement.

2.9. Reports Under Exchange Act. With a view to making available to the Holders the benefits of SEC Rule 144 and any other rule or regulation of the SEC that may at any time permit a Holder to sell securities of the Company to the public without registration or pursuant to a registration on Form S-3, the Company shall:

(a) make and keep available adequate current public information, as those terms are understood and defined in SEC Rule 144, at all times after the effective date of the registration statement filed by the Company for the IPO;

(b) use commercially reasonable efforts to file with the SEC in a timely manner all reports and other documents required of the Company under the Securities Act and the Exchange Act (at any time after the Company has become subject to such reporting requirements); and

(c) furnish to any Holder, so long as the Holder owns any Registrable Securities, forthwith upon request (i) to the extent accurate, a written statement by the Company that it has complied with the reporting requirements of SEC Rule 144 (at any time after ninety (90) days after the effective date of the registration statement filed by the Company for the IPO), the Securities Act, and the Exchange Act (at any time after the Company has become subject to such reporting requirements), or that it qualifies as a registrant whose securities may be resold pursuant to Form S-3 (at any time after the Company so qualifies); (ii) a copy of the most recent annual or quarterly report of the Company and such other reports and documents so filed by the Company; and (iii) such other information as may be reasonably requested in availing any Holder of any rule or regulation of the SEC that permits the selling of any such securities without registration (at any time after the Company has become subject to the reporting requirements under the Exchange Act) or pursuant to Form S-3 (at any time after the Company so qualifies to use such form).

2.10. Limitations on Subsequent Registration Rights. From and after the date of this Agreement, the Company shall not, without the prior written consent of the Holders of at least 70% of the Registrable Securities then outstanding, enter into any agreement with any holder or prospective holder of any securities of the Company that (i) would provide to such holder the right to include securities in any registration on other than a subordinate basis after all Holders have had the opportunity to include in the registration and offering all shares of Registrable Securities that they wish to so include or (ii) allow such holder or prospective holder to initiate a demand for registration of any securities held by such holder or prospective holder; provided that this limitation shall not apply to any additional Investor who becomes a party to this Agreement in accordance with Section 5.9.

2.11. "Market Stand off" Agreement. Each Holder hereby agrees that it will not, without the prior written consent of the managing underwriter, during the period commencing on the date of the final prospectus relating to the registration by the Company of shares of its Common Stock or any other equity securities under the Securities Act on a registration statement on Form S-1, and ending on the date specified by the Company and the managing underwriter (such period not to exceed one hundred eighty (180) days in the case of the IPO, or such other period as may be requested by the Company or an underwriter to accommodate regulatory restrictions on (1) the publication or other distribution of research

reports and (2) analyst recommendations and opinions, including, but not limited to, the restrictions contained in FINRA Rule 2711(f)(4) or NYSE Rule 472(f)(4), or any successor provisions or amendments thereto), (i) lend; offer; pledge; sell; contract to sell; sell any option or contract to purchase; purchase any option or contract to sell; grant any option, right, or warrant to purchase; or otherwise transfer or dispose of, directly or indirectly, any shares of Common Stock or any securities convertible into or exercisable or exchangeable (directly or indirectly) for Common Stock held immediately before the effective date of the registration statement for such offering or (ii) enter into any swap or other arrangement that transfers to another, in whole or in part, any of the economic consequences of ownership of such securities, whether any such transaction described in clause (i) or (ii) above is to be settled by delivery of Common Stock or other securities, in cash, or otherwise. The foregoing provisions of this Section 2.11 shall apply only to the IPO, shall not apply to the sale of any shares to an underwriter pursuant to an underwriting agreement, or the transfer of any shares to any trust for the direct or indirect benefit of the Holder or the immediate family of the Holder, provided that the trustee of the trust agrees to be bound in writing by the restrictions set forth herein, and provided further that any such transfer shall not involve a disposition for value, and shall be applicable to the Holders only if all officers and directors are subject to the same restrictions and the Company obtains a similar agreement from all stockholders individually owning more than one percent (1%) of the Company's outstanding Common Stock (after giving effect to conversion

into Common Stock of all outstanding Preferred Stock). The underwriters in connection with such registration are intended third-party beneficiaries of this Section 2.11 and shall have the right, power, and authority to enforce the provisions hereof as though they were a party hereto. Each Holder further agrees to execute such agreements as may be reasonably requested by the underwriters in connection with such registration that are consistent with this Section 2.11 or that are necessary to give further effect thereto. Any discretionary waiver or termination of the restrictions of any or all of such agreements by the Company or the underwriters shall apply pro rata to all Holders subject to such agreements, based on the number of shares subject to such agreements.

2.12. Restrictions on Transfer.

(a) The Series D Preferred Stock and the Registrable Securities shall not be sold, pledged, or otherwise transferred, and the Company shall not recognize and shall issue stop-transfer instructions to its transfer agent with respect to any such sale, pledge, or transfer, except upon the conditions specified in this Agreement, which conditions are intended to ensure compliance with the provisions of the Securities Act. A transferring Holder will cause any proposed purchaser, pledgee, or transferee of the Series D Preferred Stock and the Registrable Securities held by such Holder to agree to take and hold such securities subject to the provisions and upon the conditions specified in this Agreement.

(b) Each certificate or instrument representing (i) the Series D Preferred Stock, (ii) the Registrable Securities, and (iii) any other securities issued in respect of the securities referenced in clauses (i) and (ii), upon any stock split, stock dividend, recapitalization, merger, consolidation, or similar event, shall (unless otherwise permitted by the provisions of Section 2.12(c)) be stamped or otherwise imprinted with a legend substantially in the following form:

THE SECURITIES REPRESENTED HEREBY HAVE BEEN ACQUIRED FOR INVESTMENT AND HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933. SUCH SHARES MAY NOT BE SOLD, PLEDGED, OR TRANSFERRED IN THE ABSENCE OF SUCH REGISTRATION OR A VALID EXEMPTION FROM THE REGISTRATION AND PROSPECTUS DELIVERY REQUIREMENTS OF SAID ACT.

THE SECURITIES REPRESENTED HEREBY MAY BE TRANSFERRED ONLY IN ACCORDANCE WITH THE TERMS OF AN AGREEMENT BETWEEN THE COMPANY AND THE STOCKHOLDER, A COPY OF WHICH IS ON FILE WITH THE SECRETARY OF THE COMPANY.

The Holders consent to the Company making a notation in its records and giving instructions to any transfer agent of the Restricted Securities in order to implement the restrictions on transfer set forth in this Section 2.12.

(c) The holder of each certificate representing Restricted Securities, by acceptance thereof, agrees to comply in all respects with the provisions of this Section 2. Before any proposed sale, pledge, or transfer of any Restricted Securities, unless there is in effect a registration statement under the Securities Act covering the proposed transaction, the Holder thereof shall give notice to the Company of such Holder's intention to effect such sale, pledge, or transfer. Each such notice shall describe the manner and circumstances of the proposed sale, pledge, or transfer in sufficient detail and, if reasonably requested by the Company, shall be accompanied at such Holder's expense by either (i) a written opinion of legal counsel who shall, and whose legal opinion shall, be reasonably satisfactory to the Company, addressed to the Company, to the effect that the proposed transaction may be effected without registration under the Securities Act; (ii) a "no action" letter from the SEC to the effect that the proposed sale, pledge, or transfer of such Restricted Securities without registration will not result in a recommendation by the staff of the SEC that action be taken with respect thereto; or (iii) any other evidence reasonably satisfactory to counsel to the Company to the effect that the proposed sale, pledge, or transfer of the Restricted Securities may be effected without registration under the Securities Act, whereupon the Holder of such Restricted Securities shall be entitled to sell, pledge, or transfer such Restricted Securities in accordance with the terms of the notice given by the Holder to the Company. The Company will not require such a legal opinion or "no action" letter (x) in any transaction in compliance with SEC Rule 144 or (y) in any transaction in which such Holder distributes Restricted Securities to an Affiliate of such Holder for no consideration, provided that each such Affiliate transferee agrees in writing to be subject to the terms of this Section 2.12. Each certificate or instrument evidencing the Restricted Securities transferred as above provided shall bear, except if such transfer is made pursuant to SEC Rule 144, the appropriate restrictive legend set forth in Section 2.12(b), except that such certificate shall not bear such restrictive legend if, in the opinion of counsel for such Holder and the Company, such legend is not required in order to establish compliance with any provisions of the Securities Act.

2.13. Termination of Registration Rights. The right of any Holder to request registration or inclusion of Registrable Securities in any registration pursuant to Section 2.1 or Section 2.2 shall terminate upon the earliest to occur of:

(a) such time as Rule 144 or another similar exemption under the Securities Act is available for the sale of all of such Holder's shares without limitation during a three-month period without registration; and

(b) the fifth anniversary of the IPO.

3. Information Rights.

3.1. Delivery of Financial Statements. The Company shall deliver to each Investor:

(a) as soon as practicable, (i) a balance sheet as of the end of such year, (ii) statements of income and of cash flows for such year, and a comparison between (x) the actual amounts as of and for such fiscal year and (y) the comparable amounts for the prior year and as included in the budget for such year, with an explanation of any material differences between such amounts and a schedule as to the sources and applications of funds for such year, and (iii) a statement of stockholders' equity as of the end of such year, all such financial statements audited and certified by independent public accountants of nationally recognized standing selected by the Company, unless the holders of a majority of the Registrable Securities agree otherwise; provided that if such audited statements cannot be provided within ninety (90) days after the end of any fiscal year, the Company will within ninety (90) days provide unaudited statements with the same information (and will provide the audited statements when practicable);

(b) as soon as practicable, but in any event within thirty (30) days after the end of each of the first three (3) quarters of each fiscal year of the Company, unaudited statements of income and of cash flows for such fiscal quarter, and an unaudited balance sheet and a statement of stockholders' equity as of the end of such fiscal quarter, all prepared in accordance with GAAP (except that such financial statements may (i) be subject to normal year-end audit adjustments and (ii) not contain all notes thereto that may be required in accordance with GAAP);

(c) as soon as practicable, but in any event within thirty (30) days of the end of each month, an unaudited income statement and statement of cash flows for such month, and an unaudited balance sheet and statement of stockholders' equity as of the end of such month, all prepared in accordance with GAAP (except that such financial statements may (i) be subject to normal year-end audit adjustments and (ii) not contain all notes thereto that may be required in accordance with GAAP);

(d) as soon as practicable, in accordance with a schedule agreed upon by the Board of Directors, a budget and operating plan for the next fiscal year, approved by the Board of Directors and prepared on a monthly basis, including balance sheets, income statements, and statements of cash flow for such months and, promptly after prepared, any other budgets or revised budgets prepared by the Company;

(e) with respect to the financial statements called for in Section 3.1(a), Section 3.1(b) and Section 3.1(c), an instrument executed by the chief financial officer and chief executive officer of the Company certifying that such financial statements were prepared in accordance with GAAP consistently applied with prior practice for earlier periods (except as otherwise set forth in Section 3.1(b) and Section 3.1(c)) and fairly present the financial condition of the Company and its results of operation for the periods specified therein; and

(f) such other information relating to the financial condition, business, prospects, or corporate affairs of the Company as any Investor may from time to time reasonably request; provided, however, that the Company shall not be obligated under this Section 3.1 to provide information (i) that the Company reasonably determines in good faith to be a trade secret or confidential information (unless covered by an enforceable confidentiality agreement, in form reasonably acceptable to the Company) or (ii) the disclosure of which would adversely affect the attorney-client privilege between the Company and its counsel.

If, for any period, the Company has any subsidiary whose accounts are consolidated with those of the Company, then in respect of such period the financial statements delivered pursuant to the foregoing

sections shall be the consolidated and consolidating financial statements of the Company and all such consolidated subsidiaries.

Notwithstanding anything else in this Section 3.1 to the contrary, the Company may cease providing the information set forth in this Section 3.1 during the period starting with the date thirty (30) days before the Company's good-faith estimate of the date of filing of a registration statement if it reasonably concludes it must do so to comply with the SEC rules applicable to such registration statement and related offering; provided that the Company's covenants under this Section 3.1 shall be reinstated at such time as the Company is no longer actively employing its commercially reasonable efforts to cause such registration statement to become effective.

3.2. Inspection. The Company shall permit each Investor, at such Investor's expense, to visit and inspect the Company's properties; examine its books of account and records; and discuss the Company's affairs, business, operations, finances, and accounts with its officers, during normal business hours of the Company as may be reasonably requested by the Investor; provided, however, that the Company shall not be obligated pursuant to this Section 3.2 to provide access to any information that it reasonably and in good faith considers to be a trade secret or confidential information (unless covered by an enforceable confidentiality agreement, in form reasonably acceptable to the Company) or the disclosure of which would adversely affect the attorney-client privilege between the Company and its counsel.

3.3. Termination of Information Rights. The covenants set forth in Section 3.1 and Section 3.2 shall terminate and be of no further force or effect (i) immediately before the consummation of the IPO, or (ii) when the Company first becomes subject to the periodic reporting requirements of Section 12(g) or 15(d) of the Exchange Act, whichever event occurs first.

3.4. Confidentiality. Each Investor agrees that such Investor will keep confidential and will not disclose, divulge, or use for any purpose (other than to monitor its investment in the Company) any confidential information obtained from the Company pursuant to the terms of this Agreement (including notice of the Company's intention to file a registration statement), unless such confidential information (a) is known or becomes known to the public in general (other than as a result of a breach of this Section 3.4 by such Investor), (b) is or has been independently developed or conceived by the Investor without use of the Company's confidential information, or (c) is or has been made known or disclosed to the Investor by a third party without a breach of any obligation of confidentiality such third party may have to the Company; provided, however, that an Investor may disclose confidential information (i) to its attorneys, accountants, consultants, and other professionals to the extent necessary to obtain their services in connection with monitoring its investment in the Company; (ii) to any prospective purchaser of any Registrable Securities from such Investor, if such prospective purchaser agrees to be bound by the provisions of this Section 3.4; (iii) to any existing or prospective Affiliate, partner, member, stockholder, or wholly owned subsidiary of such Investor in the ordinary course of business, provided that such Investor informs such Person that such information is confidential and directs such Person to maintain the confidentiality of such information; or (iv) as may otherwise be required by law, provided that (to the extent permitted by applicable law) the Investor promptly notifies the Company of such disclosure and takes reasonable steps to minimize the extent of any such required disclosure.

4. Rights to Future Stock Issuances.

4.1. Right of First Offer. Subject to the terms and conditions of this Section 4.1 and applicable securities laws, if the Company proposes to offer or sell any New Securities, the Company shall first offer such New Securities to each Investor. An Investor shall be entitled to apportion the right of first offer hereby granted to it in such proportions as it deems appropriate, among (i) itself, (ii) its

Affiliates and (iii) its beneficial interest holders, such as limited partners, members or any other Person having "beneficial ownership," as such term is defined in Rule 13d-3 promulgated under the Exchange Act, of such Investor.

(a) The Company shall give notice (the "**Offer Notice**") to each Investor, stating (i) its bona fide intention to offer such New Securities, (ii) the number of such New Securities to be offered, and (iii) the price and terms, if any, upon which it proposes to offer such New Securities.

(b) By notification to the Company within twenty (20) days after the Offer Notice is given, each Investor may elect to purchase or otherwise acquire, at the price and on the terms specified in the Offer Notice, up to that portion of such New Securities which equals the proportion that the Common Stock issued and held, or issuable (directly or indirectly) upon conversion and/or exercise, as applicable, of the Preferred Stock and any other Derivative Securities then held, by such Investor bears to the total Common Stock of the Company then outstanding (assuming full conversion and/or exercise, as applicable, of all Preferred Stock and other Derivative Securities). At the expiration of such twenty (20) day period, the Company shall promptly notify each Investor that elects to purchase or acquire all the shares available to it (each, a "**Fully Exercising Investor**") of any other Investor's failure to do likewise. During the ten (10) day period commencing after the Company has given such notice, each Fully Exercising Investor may, by giving notice to the Company, elect to purchase or acquire, in addition to the number of shares specified above, up to that portion of the New Securities for which Investors were entitled to subscribe but that were not subscribed for by the Investors which is equal to the proportion that the Common Stock issued and held, or issuable (directly or indirectly) upon conversion and/or exercise, as applicable, of Preferred Stock and any other Derivative Securities then held, by such Fully Exercising Investor bears to the Common Stock issued and held, or issuable (directly or indirectly) upon conversion and/or exercise, as applicable, of the Preferred Stock and any other Derivative Securities then held, by all Fully Exercising Investors who wish to purchase such unsubscribed shares. The closing of any sale pursuant to this Section 4.1(b) shall occur within the later of ninety (90) days of the date that the Offer Notice is given and the date of initial sale of New Securities pursuant to Section 4.1(c).

(c) If all New Securities referred to in the Offer Notice are not elected to be purchased or acquired as provided in Section 4.1(b), the Company may, during the ninety (90) day period following the expiration of the periods provided in Section 4.1(b), offer and sell the remaining unsubscribed portion of such New Securities to any Person or Persons at a price not less than, and upon terms no more favorable to the offeree than, those specified in the Offer Notice. If the Company does not enter into an agreement for the sale of the New Securities within such period, or if such agreement is not consummated within thirty (30) days of the execution thereof, the right provided hereunder shall be deemed to be revived and such New Securities shall not be offered unless first reoffered to the Investors in accordance with this Section 4.1.

(d) The right of first offer in this Section 4.1 shall not be applicable to (i) Exempted Securities (as defined in the Company's Certificate of Incorporation), (ii) shares of Common Stock issued in the IPO, and (iii) the issuance of shares of Series D Preferred Stock to Additional Purchasers pursuant to Subsection 1.3 of the Purchase Agreement.

4.2. Termination. The covenants set forth in Section 4.1 shall terminate and be of no further force or effect (i) immediately before the consummation of the IPO, or (ii) when the Company

first becomes subject to the periodic reporting requirements of Section 12(g) or 15(d) of the Exchange Act, whichever event occurs first.

5. Additional Covenants.

5.1. Board Matters. Unless otherwise determined by the vote of a majority of the directors then in office, the Board of Directors shall meet at least quarterly in accordance with an agreed-upon schedule. The Company shall reimburse the nonemployee directors for all reasonable out-of-pocket travel expenses incurred (consistent with the Company's travel policy) in connection with attending meetings of the Board of Directors. The Company shall cause to be established, as soon as practicable after such request, and will maintain, an audit and compensation committee, each of which shall consist solely of non-management directors. Each non-employee director shall be entitled in such person's discretion to be a member of any Board committee. The covenants set forth in this Section 5.1 shall terminate and be of no further force or effect upon the earlier of (i) immediately before the consummation of an IPO or (ii) when the Company first becomes subject to the periodic reporting requirements of Section 12(g) or 15(d) of the Exchange Act.

5.2. Successor Indemnification. If the Company or any of its successors or assignees consolidates with or merges into any other Person and is not the continuing or surviving corporation or entity of such consolidation or merger, then to the extent necessary, proper provision shall be made so that the successors and assignees of the Company assume the obligations of the Company with respect to indemnification of members of the Board of Directors as in effect immediately before such transaction, whether such obligations are contained in the Company's Bylaws, its Articles of Incorporation, or elsewhere, as the case may be.

5.3. Indemnification Matters. The Company hereby acknowledges that one (1) or more of the directors nominated to serve on the Board of Directors by the Investors (each a "**Fund Director**") may have certain rights to indemnification, advancement of expenses and/or insurance provided by one or more of the Investors and certain of their affiliates (collectively, the "**Fund Indemnitors**"). The Company hereby agrees (a) that it is the indemnitor of first resort (*i.e.*, its obligations to any such Fund Director are primary and any obligation of the Fund Indemnitors to advance expenses or to provide indemnification for the same expenses or liabilities incurred by such Fund Director are secondary), (b) that it shall be required to advance the full amount of expenses incurred by such Fund Director and shall be liable for the full amount of all expenses, judgments, penalties, fines and amounts paid in settlement by or on behalf of any such Fund Director to the extent legally permitted and as required by the Company's Articles of Incorporation or Bylaws of the Company (or any agreement between the Company and such Fund Director), without regard to any rights such Fund Director may have against the Fund Indemnitors, and, (c) that it irrevocably waives, relinquishes and releases the Fund Indemnitors from any and all claims against the Fund Indemnitors for contribution, subrogation or any other recovery of any kind in respect thereof. The Company further agrees that no advancement or payment by the Fund Indemnitors on behalf of any such Fund Director with respect to any claim for which such Fund Director has sought indemnification from the Company shall affect the foregoing and the Fund Indemnitors shall have a right of contribution and/or be subrogated to the extent of such advancement or payment to all of the rights of recovery of such Fund Director against the Company.

5.4. Right to Conduct Activities. The Company hereby agrees and acknowledges that Mandala Agribusiness Co-Investments I Limited ("**Mandala**") (together with its affiliates) is a professional investment fund, and as such invests in numerous portfolio companies, some of which may be deemed competitive with the Company's business (as currently conducted or as currently propose to be conducted). The Company hereby agrees that, to the extent permitted under applicable law, Mandala shall not be liable to the Company for any claim arising out of, or based upon, (i) the investment by

Mandala in any entity competitive with the Company, or (ii) actions taken by any partner, officer or other representative of Mandala to assist any such competitive company, whether or not such action was taken as a member of the board of directors of such competitive company or otherwise, and whether or not such action

has a detrimental effect on the Company; provided, however, that the foregoing shall not relieve (x) any of the Investors from liability under Section 3.4 of this Agreement associated with the unauthorized disclosure of the Company's confidential information, or (y) any director or officer of the Company from any liability associated with his or her fiduciary duties to the Company.

6. Miscellaneous.

6.1. Successors and Assigns. The rights under this Agreement may be assigned (but only with all related obligations) by a Holder to a transferee of Registrable Securities that (i) is an Affiliate of a Holder or (ii) is a Holder's Immediate Family Member or trust for the benefit of an individual Holder or one or more of such Holder's Immediate Family Members; provided, however, that (x) the Company is, within a reasonable time after such transfer, furnished with written notice of the name and address of such transferee and the Registrable Securities with respect to which such rights are being transferred; and (y) such transferee agrees in a written instrument delivered to the Company to be bound by and subject to the terms and conditions of this Agreement, including the provisions of Section 2.11. In addition to the foregoing, the rights of this Agreement may be assigned (but only with all related obligations) by a Holder to a transferee of Registrable Securities that is not an Affiliate or Immediate Family Member of such Holder provided that (a) prior written notice of such transfer is delivered to the Company, (b) the transferee is not a competitor of the Company, as determined by the Company's Board of Directors in good faith, (c) the transferee acquires in such transfer at least twenty percent (20%) of the Registrable Securities held by such Holder immediately prior to such transfer, and (d) such transferee agrees in a written instrument delivered to the Company to be bound by and subject to the terms and conditions of this Agreement, including the provisions of Section 2.11. The terms and conditions of this Agreement inure to the benefit of and are binding upon the respective successors and permitted assignees of the parties. Nothing in this Agreement, express or implied, is intended to confer upon any party other than the parties hereto or their respective successors and permitted assignees any rights, remedies, obligations or liabilities under or by reason of this Agreement, except as expressly provided herein.

6.2. Governing Law. This Agreement shall be governed by, and construed in accordance with, the laws of the State of Arizona, regardless of the laws that might otherwise govern under applicable principles of conflicts of law.

6.3. Counterparts; Facsimile. This Agreement may be executed and delivered by facsimile or .PDF format signature and in two or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument.

6.4. Titles and Subtitles. The titles and subtitles used in this Agreement are used for convenience only and are not to be considered in construing or interpreting this Agreement.

6.5. Notices. All notices and other communications given or made pursuant to this Agreement shall be in writing and shall be deemed effectively given upon the earlier of actual receipt or: (a) personal delivery to the party to be notified, (b) when sent, if sent by facsimile during normal business hours of the recipient, and if not sent during normal business hours, then on the recipient's next business day, (c) five (5) days after having been sent by registered or certified mail, return receipt requested, postage prepaid, or (d) one (1) business day after the business day of deposit with a nationally recognized overnight courier, freight prepaid, specifying next business day delivery, with written verification of receipt. All communications shall be sent to the respective parties at their addresses as set forth on Schedule A or Schedule B (as applicable) hereto, or to the principal office of the Company and to the

attention of the Chief Executive Officer, in the case of the Company, or to such facsimile number, or address as subsequently modified by written notice given in accordance with this Section 6.5.

6.6. Consent Required to Amend, Terminate or Waive. This Agreement may be terminated or amended, and the observance of any term hereof may be waived (either generally or in a particular instance, and either retroactively or prospectively), only with by a written instrument executed by the Company and the holders of at least a majority of the Registrable Securities then outstanding; provided that the Company may in its sole discretion waive compliance with Section 2.12(c); and provided further that any provision hereof may be waived by any waiving party on such party's own behalf, without the consent of any other party. Notwithstanding the foregoing, this Agreement may not be amended or terminated and the observance of any term hereof may not be waived with respect to any Investor without the written consent of such Investor, unless such amendment, termination, or waiver applies to all Investors in the same fashion (it being agreed that a waiver of the provisions of Section 4 with respect to a particular transaction shall be deemed to apply to all Investors in the same fashion if such waiver does so by its terms, notwithstanding the fact that certain Investors may nonetheless, by agreement with the Company, purchase securities in such transaction). The Company shall give prompt written notice of any amendment, termination or waiver hereunder to any party that did not consent in writing thereto. Any amendment, termination, or waiver effected in accordance with this Section 6.6 shall be binding on each party and all of such party's successors and permitted assigns, whether or not any such party, successor or assignee entered into or approved such amendment, termination or waiver.

6.7. Severability. The invalidity or unenforceability of any provision hereof shall in no way affect the validity or enforceability of any other provision.

6.8. Aggregation of Stock. All shares of Registrable Securities held or acquired by Affiliates shall be aggregated together for the purpose of determining the availability of any rights under this Agreement, and such Affiliated persons may apportion such rights as among themselves in any manner they deem appropriate.

6.9. Additional Investors. Notwithstanding anything to the contrary contained herein, if the Company issues additional shares of the Company's Series D Preferred Stock after the date hereof, whether pursuant to the Purchase Agreement or otherwise, any purchaser of such shares of Series D Preferred Stock may become a party to this Agreement by executing and delivering an additional counterpart signature page to this Agreement, and thereafter shall be deemed an "Investor" for all purposes hereunder. No action or consent by the Investors shall be required for such joinder to this Agreement by such additional Investor, so long as such additional Investor has agreed in writing to be bound by all of the obligations as an "Investor" hereunder.

6.10. Entire Agreement. This Agreement (including any Schedules and Exhibits hereto) constitutes the full and entire understanding and agreement among the parties with respect to the subject matter hereof, and any other written or oral agreement relating to the subject matter hereof existing between the parties is expressly canceled.

6.11. Further Assurances. At any time or from time to time after the date hereof, the parties agree to cooperate with each other, and at the request of any other party, to execute and deliver any further instruments or documents and to take all such further action as any other party may reasonably request in order to evidence or effectuate the consummation of the transactions contemplated hereby and to otherwise carry out the intent of the parties hereunder.

6.12. Dispute Resolution. The parties hereby (a) irrevocably and unconditionally submit to the jurisdiction of the federal and state courts located in Maricopa County, Arizona for the

purpose of any suit, action or other proceeding arising out of or based upon this Agreement, (b) agree not to commence any suit, action or other proceeding arising out of or based upon this Agreement except in the federal and state courts located within the geographical boundaries of Maricopa County, Arizona, and (c) waive, and agree not to assert, by way of motion, as a defense, or otherwise, in any such suit, action or proceeding, any claim that it is not subject personally to the jurisdiction of the above-named courts, that its property is exempt or immune from attachment or execution, that the suit, action or proceeding is brought in an inconvenient forum, that the venue of the suit, action or proceeding is improper or that this Agreement or the subject matter hereof may not be enforced in or by such court. Each of the parties to this Agreement consents to personal jurisdiction for any equitable action sought in the federal and state courts located in Maricopa County, Arizona having subject matter jurisdiction.

6.13. WAIVER OF JURY TRIAL: EACH PARTY HEREBY WAIVES ITS RIGHTS TO A JURY TRIAL OF ANY CLAIM OR CAUSE OF ACTION BASED UPON OR ARISING OUT OF THIS AGREEMENT, THE OTHER TRANSACTION DOCUMENTS, THE SECURITIES OR THE SUBJECT MATTER HEREOF OR THEREOF. THE SCOPE OF THIS WAIVER IS INTENDED TO BE ALL-ENCOMPASSING OF ANY AND ALL DISPUTES THAT MAY BE FILED IN ANY COURT AND THAT RELATE TO THE SUBJECT MATTER OF THIS TRANSACTION, INCLUDING, WITHOUT LIMITATION, CONTRACT CLAIMS, TORT CLAIMS (INCLUDING NEGLIGENCE), BREACH OF DUTY CLAIMS, AND ALL OTHER COMMON LAW AND STATUTORY CLAIMS. THIS SECTION HAS BEEN FULLY DISCUSSED BY EACH OF THE PARTIES HERETO AND THESE PROVISIONS WILL NOT BE SUBJECT TO ANY EXCEPTIONS. EACH PARTY HERETO HEREBY FURTHER WARRANTS AND REPRESENTS THAT SUCH PARTY HAS REVIEWED THIS WAIVER WITH ITS LEGAL COUNSEL, AND THAT SUCH PARTY KNOWINGLY AND VOLUNTARILY WAIVES ITS JURY TRIAL RIGHTS FOLLOWING CONSULTATION WITH LEGAL COUNSEL.

6.14. Costs of Enforcement. If any party to this Agreement seeks to enforce its rights under this Agreement by legal proceedings, the non-prevailing party shall pay all costs and expenses incurred by the prevailing party, including, without limitation, all reasonable attorneys' fees.

6.15. Delays or Omissions. No delay or omission to exercise any right, power or remedy accruing to any party under this Agreement, upon any breach or default of any other party under this Agreement, shall impair any such right, power or remedy of such non-breaching or non-defaulting party nor shall it be construed to be a waiver of any such breach or default, or an acquiescence therein, or of or in any similar breach or default thereafter occurring; nor shall any waiver of any single breach or default be deemed a waiver of any other breach or default previously or thereafter occurring. Any waiver, permit, consent or approval of any kind or character on the part of any party of any breach or default under this Agreement, or any waiver on the part of any party of any provisions or conditions of this Agreement, must be in writing and shall be effective only to the extent specifically set forth in such writing. All remedies, whether under this Agreement or by law or otherwise afforded to any party, shall be cumulative and not alternative.

6.16. Acknowledgment. The Company acknowledges that the Investors are in the business of venture capital investing and therefore review the business plans and related proprietary information of many enterprises, including enterprises that may have products or services that compete directly or indirectly with those of the Company. Nothing in this Agreement shall preclude or in any way restrict the Investors from investing or participating in any particular enterprise whether or not such enterprise has products or services that compete with those of the Company.

[REMAINDER OF PAGE INTENTIONALLY LEFT BLANK]

IN WITNESS WHEREOF, the parties have executed this Agreement as of the date first written above.

ARCADIA BIOSCIENCES, INC.

By: /s/ Eric J. Rey
Name: Eric J. Rey
Title: President & Chief Executive Officer

[SIGNATURE PAGE TO INVESTORS' RIGHTS AGREEMENT]

INVESTORS:

MANDALA AGRIBUSINESS CO-INVESTMENTS I LIMITED

By: /s/ Tej Gujadhur
Name: Tej Gujadhur
Its: Director

BASF VENTURE CAPITAL GMBH

By: /s/
Name:
Its:

THE BELLOW FAMILY TRUST UTD

By: /s/
Name:
Its:

ARNOLD BENDITCH & JUDITH E. BENDICH TENANTS IN COMMON

By: /s/ Arnold Bendich & Judith E. Bendich
Name: Arnold Bendich & Judith E. Bendich

VIC KNAUF

By: /s/ Vic Knauf
Name: Vic Knauf

EDMUND LANG

By: /s/ Edmund Lang
Name: Edmund Lang

ILENE H. LANG

By: /s/ Ilene H. Lang
Name: Ilene H. Lang

ANDREW P. PRAGUE

By: /s/ Andrew P. Prague
Name: Andrew P. Prague

CMEA VENTURES LIFE SCIENCES 2000 CIVIL LAW PARTNERSHIP

By: /s/ David Collier
Name: David Collier
Its: General Partner

CMEA VENTURES LIFE SCIENCES 2000 LIMITED PARTNERSHIP

By: /s/ David Collier
Name: David Collier
Its: General Partner

SAINTS CAPITAL V, L.P.

By: /s/
Name:
Its:

SCHEDULE A

Investors

Name and Address:

Mandala Agribusiness Co-Investments I Limited
C/O GFin Corporate Services Ltd.
9th Floor, Orange Tower
Cybercity, Ebene
Mauritius

With a copy (which shall not constitute notice) to:
Baker & McKenzie LLP
815 Connecticut Avenue NW
Washington, District of Columbia 20006
Attention: Marc R. Paul, Esq.

BASF Venture Capital GmbH
Attention: Pulakesh Mukherjee
46820 Fremont Boulevard
Fremont, CA 94538

The Bellow Family Trust UTD
Attention: Gregory and Jo Ann Bellow
775 Hillcrest Way
Redwood City, CA 94062

Arnold Bendich and Judith E. Bendich
Tenants in Common
1754 NE 62nd Street
Seattle, WA 98115

CMEA Ventures Life Sciences 2000
Civil Law Partnership
Attention: Peter Gajdos
The Presidio of San Francisco
One Letterman Drive
Building C, Suite CM500
San Francisco, CA 94129

CMEA Ventures Life Sciences 2000
Limited Partnership
Attention: Peter Gajdos
The Presidio of San Francisco
One Letterman Drive
Building C, Suite CM500
San Francisco, CA 94129

Vic Knauf
11835 NE Yeomalt Point Drive
Bainbridge Island, WA 98110

Edmund Lang
5 Tabor Hill Road
Lincoln, MA 01773-2905

[SCHEDULE A CONTINUED ON NEXT PAGE]

Name and Address:

Ilene H. Lang
65 W. 13th Street, Apt. 8E
New York, NY 10011

Andrew P. Prague
15 Walnut Street, Suite 150
Wellesley, MA 02481

Saints Capital V, L.P.
Attention: Lilian Shackelford Murray
2020 Union Street
San Francisco, CA 94123

ARCADIA BIOSCIENCES, INC.

AMENDED AND RESTATED
INVESTORS' RIGHTS AGREEMENT

THIS AMENDED AND RESTATED INVESTORS' RIGHTS AGREEMENT (this "**Agreement**") is made as of April 30, 2010 by and among **Arcadia Biosciences, Inc.**, an Arizona corporation (the "**Company**"), **Moral Hazard Corporation**, a Delaware corporation ("**MHC**") that is the successor in interest to Exeter Life Sciences, Inc., an Arizona corporation ("**Exeter**"), and the holders of Registrable Securities (defined below) listed on Schedule A hereto (each an "**Investor**" and collectively the "**Investors**").

RECITALS

WHEREAS, certain Investors received shares of Series A Preferred Stock of the Company ("**Series A Preferred Stock**") issued (1) pursuant to the conversion of those certain Convertible Promissory Notes, each dated June 15, 2005, as amended, issued to Exeter in the principal amount of Fifteen Million Dollars (US$15,000,000) and/or (2) pursuant to that certain Agreement and Plan of Merger and Reorganization, dated April 19, 2005, by and among the Company, Anawah Inc., a corporation organized under the laws of the State of Washington, and CMEA Ventures LS Management 2000, L.P., as Shareholders' Agent, (the "**Merger Agreement**") and/or (3) pursuant to that certain Support Agreement, dated as of June 15, 2005, by and between the Company and Exeter;

WHEREAS, the Company, Exeter and certain Investors entered into that certain Investors' Rights Agreement dated June 15, 2005 (the "**Original Agreement**");

WHEREAS, the Company, Exeter and certain Investors entered into that certain First Amendment to Investors' Rights Agreement dated April 8, 2008;

WHEREAS, certain Investors received shares of Series B Preferred Stock of the Company ("**Series B Preferred Stock**") issued pursuant to the conversion of those certain Convertible Promissory Notes, each dated as of September 26, 2008 by and between the Company and each such Investor, in the aggregate principal amount of Fifteen Million Dollars (US$15,000,000), and that certain Series B Preferred Stock Agreement, dated June 30, 2009, by and among the Company and the Investors party thereto;

WHEREAS, in connection with the issuance of the Series B Preferred Stock, the Original Agreement was amended and restated by that certain Amended and Restated Investors' Rights Agreement, dated as of June 30, 2009, by and among the Company, Exeter and the Investors party thereto (the "**Prior Agreement**");

WHEREAS, certain Investors received shares of Series C Preferred of the Company (the "**Series C Preferred Stock**," and, together with the Series A Preferred Stock and Series B Preferred Stock, the "**Preferred Stock**") issued pursuant to that certain Series C Preferred Stock Purchase Agreement, dated October 30, 2009 ("**Series C Purchase Agreement**"); and

WHEREAS, in connection with the issuance of the Series C Preferred Stock, the Prior Agreement was amended and restated by that certain Amended and Restated Investors' Rights Agreement, dated as of October 30, 2009, by and among the Company, Exeter and the Investors party thereto (the "**Immediately Preceding Agreement**");

WHEREAS, one of the Investors, Vilmorin & Cie, a French corporation ("**VCO**"), and the Company are parties to that certain Stock Purchase Agreement dated as of even date herewith (the "**VCO Purchase Agreement**") relating to the issue and sale of shares of Common Stock of the Company (the "**VCO Common Stock**"); and

WHEREAS, the obligations of the Company and VCO pursuant to the VCO Purchase Agreement are conditioned, among other things, upon the execution and delivery of this Agreement by the Company and the holders of a majority in interest of the Registrable Securities (the "**Majority in Interest**"), and the Company and the Majority in Interest desire to amend and restate the Immediately Preceding Agreement as provided herein.

NOW, THEREFORE, in consideration of the mutual premises and covenants set forth herein, the Company, MHC and the Investors hereby agree to amend and restate the Immediately Preceding Agreement as set forth herein, and the parties hereto agree as follows:

1. Certain Definitions.

(a) "**Act**" means the Securities Act of 1933, as amended.

(b) "**Affiliate**" means, with respect to any individual, corporation, partnership, association, trust, or any other entity (in each case, a "**Person**"), a Person that, directly or indirectly, through one or more intermediaries, controls, is controlled by, or is under common control with, the first Person. With respect to a limited liability company or a limited liability partnership, "**Affiliate**" means a fund or entity managed by the same manager or managing member or general partner or management company or by an entity controlling, controlled by, or under common control with such manager or managing member or general partner or management company. For purposes of this definition, "**control**" (including the terms "**controlled by**" and "**under common control with**") means the possession, directly or indirectly, of the power to direct or cause the direction of the management or policies of a Person, whether through the ownership of voting securities, by contract or credit arrangement, as trustee or executor, or otherwise.

(c) "**Common Stock**" means the common stock of the Company.

(d) The number of shares of "**Common Stock then outstanding**" shall mean the number of shares of Common Stock then outstanding and the number of shares of Common Stock issuable pursuant to conversion of Preferred Stock then outstanding.

(e) "**Form S-3**" means such form under the Act as in effect on the date hereof or any registration form under the Act subsequently adopted by the SEC that permits inclusion or incorporation of substantial information by reference to other documents filed by the Company with the SEC.

(f) "**Holder**" means any person owning or having the right to acquire Registrable Securities or any assignee thereof in accordance with Section 2.10 hereof.

(g) "**Initial Public Offering**" means the first firm commitment underwritten public offering of securities of the Company pursuant to an effective registration statement under the Act (other than a registration statement relating either to the sale of securities to employees of the Company pursuant to a stock option, stock purchase or similar plan or an SEC Rule 145 transaction).

(h) "**Primary Non-Exeter Preferred**" means Preferred Stock held by the following entities, or their successors or assigns: CMEA Ventures Life Sciences 2000 Limited Partnership, BASF Venture Capital GMBH, Saints Capital V, L.P., and CMEA Ventures Life Sciences 2000 Civil Law Partnership.

(i) The terms "**register**," "**registered**," and "**registration**" refer to a registration effected by preparing and filing a registration statement or similar document in compliance with the Act, and the declaration or ordering of effectiveness of such registration statement or document.

(j) "**Registrable Securities**" means (i) the Common Stock issuable or issued upon conversion of Preferred Stock, (ii) the VCO Common Stock, and (iii) any shares of Common Stock issuable or issued upon conversion of Preferred Stock upon a stock split, stock dividend, recapitalization or similar event, excluding any Registrable Securities sold by a person (x) in a transaction in which his, her or its rights under Section 2 hereof are not assigned, (y) pursuant to a registration statement under the Act that has been declared effective and such Registrable Securities have been disposed of pursuant to such effective registration statement, or (z) in a transaction in which such Registrable Securities are sold pursuant to Rule 144 (or any similar provision then in force) under the Act.

(k) The number of shares of "**Registrable Securities then outstanding**" means the number of shares determined by adding the number of shares of Common Stock outstanding that are, and the number of shares of Common Stock issuable pursuant to then exercisable or convertible securities that are, Registrable Securities.

(l) "**SEC**" shall mean the Securities and Exchange Commission.

(m) "**VCO Common Stock**" means the shares of Common Stock of the Company issued to VCO pursuant to the VCO Purchase Agreement and any additional shares of Common Stock hereafter acquired by VCO.

(n) "**1934 Act**" means the Securities Exchange Act of 1934, as amended.

2. Registration Rights.

The Company covenants and agrees as follows:

2.1 Request for Registration.

(a) Subject to the conditions of this Section 2.1, if the Company shall receive at any time after the twelve (12) month anniversary of the effective date of the Initial Public Offering, a written request from the Holders of a majority or more of the Registrable Securities then outstanding (the "**Initiating Holders**") that the Company file a registration statement under the Act covering the registration of at least twenty-five percent (25%) of the Registrable Securities then outstanding or a lesser percent if the anticipated aggregate offering price, net of underwriting discounts and commissions, would exceed Twenty Million Dollars (US$20,000,000), then the Company shall, within twenty (20) days of the receipt thereof, give written notice of such request to all Holders, and subject to the limitations of this Section 2.1, use commercially reasonable efforts to effect, as soon as practicable, the registration under the Act of all Registrable Securities that the Holders request to be registered in a written request received by the Company within twenty (20) days of the mailing of the Company's notice pursuant to this Section 2.1(a).

(b) If the Initiating Holders intend to distribute the Registrable Securities covered by their request by means of an underwriting, they shall so advise the Company as a part of their request made pursuant to this Section 2.1 and the Company shall include such information in the written notice referred to in this Section 2.1(a). In such event the right of any Holder to include its Registrable Securities in such registration shall be conditioned upon such Holder's participation in such underwriting and the inclusion of such Holder's Registrable Securities in the underwriting (unless otherwise mutually agreed by a majority in interest of the Initiating Holders and such Holder) to the extent provided herein. All Holders proposing to distribute their securities through such underwriting shall enter into an underwriting agreement in customary form with the underwriter or underwriters selected for such underwriting by the Company (which underwriter or underwriters shall be reasonably acceptable to a majority in interest of the Initiating Holders). Notwithstanding any other provision of this Section 2.1, if the underwriter advises the Company that marketing factors require a limitation of the number of securities underwritten (including Registrable Securities), then the Company shall so advise all Holders of Registrable Securities that would otherwise be underwritten pursuant hereto, and the number of shares that may be included in the underwriting shall be allocated to the Holders of such Registrable Securities on a pro rata basis (as nearly as practicable) based on the number of Registrable Securities held by all such Holders (including the Initiating Holders). Any Registrable Securities excluded or withdrawn from such underwriting shall be withdrawn from the registration.

(c) In addition, the Company shall not be required to effect a registration pursuant to this Section 2.1:

(i) after the Company has effected two (2) registrations pursuant to this Section 2.1, and such registrations have been declared or ordered effective;

(ii) If the Company has effected a registration pursuant to this Section 2.1 within the preceding twelve (12) months, and such registration has been declared or ordered effective;

(iii) during the period starting with the date sixty (60) days prior to the Company's good faith estimate of the date of the filing of, and ending on a date one hundred eighty (180) days following the effective date of, a Company-initiated registration subject to Section 2.2, provided that

the Company is actively employing in good faith all reasonable efforts to cause such registration statement to become effective;

(iv) if the Initiating Holders propose to dispose of Registrable Securities that may be registered on Form S-3 pursuant to Section 2.3;

(v) if the Company shall furnish to Holders requesting a registration pursuant to this Section 2.1, a certificate signed by the Company's Chief Executive Officer or Chairman of the Board stating that in the good faith judgment of the Board of Directors of the Company, it would be seriously detrimental to the Company and its stockholders for such registration to be effected at such time, in which event the Company shall have the right to defer such filing for a period of not more than one hundred twenty (120) days after receipt of the request of the Initiating Holders, provided that such right to delay a request shall be exercised by the Company not more than twice in any twelve (12)-month period and provided further, that the Company shall not register any other of its shares during such one hundred twenty (120) day period; or

(vi) in any particular jurisdiction in which the Company would be required to execute a general consent to service of process in effecting such registration, unless the Company is already subject to service in such jurisdiction and except as may be required under the Act.

2.2 Company Registration.

(a) If (but without any obligation to do so) the Company proposes to register (including for this purpose a registration effected by the Company for stockholders other than the Holders) any of its stock or other securities under the Act in connection with the public offering of such securities (other than a registration relating solely to the sale of securities to participants in a Company stock plan, a registration relating to a corporate reorganization or other transaction under Rule 145 of the Act, a registration on any form that does not include substantially the same information as would be required to be included in a registration statement covering the sale of the Registrable Securities, or a registration in which the only Common Stock being registered is Common Stock issuable upon conversion of debt securities that are also being registered), the Company shall, at such time, promptly give each Holder written notice of such registration. Upon the written request of each Holder given within twenty (20) days after mailing of such notice by the Company, the Company shall, subject to the provisions of Section 2.4(e), use commercially reasonable efforts to cause to be registered under the Act all of the Registrable Securities that each such Holder has requested to be registered, *provided, however,* that the Company and its underwriters may reduce the number of such Registrable Securities included in such registration, to a level not less than twenty-five percent (25%) of the total shares so offered, if the Company's managing underwriter, in its sole discretion, determines that the inclusion of such Registrable Securities would not be compatible with the success of the offering. Notwithstanding the foregoing, the terms of Section 2.12, below, rather than this Section 2.2, shall apply to the Company's Initial Public Offering.

(b) Right to Terminate Registration. The Company shall have the right to terminate or withdraw any registration initiated by it under this Section 2.2 prior to the effectiveness of such registration whether or not any Holder has elected to include securities in such registration. The expenses of such withdrawn registration shall be borne by the Company in accordance with Section 2.6 hereof.

2.3 Form S-3 Registration.

In case the Company shall receive from the Holders of at least twenty percent (20%) of the Registrable Securities then outstanding a written request or requests that the Company effect a registration on Form S-3 and any related qualification or compliance with respect to all or a part of the Registrable Securities owned by such Holder or Holders, the Company shall:

(a) promptly give written notice of the proposed registration, and any related qualification or compliance, to all other Holders; and

(b) use commercially reasonable efforts to effect, as soon as practicable, such registration and all such qualifications and compliances as may be so requested and as would permit or facilitate the sale and distribution of all or such portion of such Holders' Registrable Securities as are specified in such request, together with all or such portion of the Registrable Securities of any other Holders joining in such request as are specified in a written request given within fifteen (15) days after receipt of such written notice from the Company, *provided, however,* that the Company shall not be obligated to effect any such registration, qualification or compliance, pursuant to this Section 2.3:

(i) if Form S-3 is not available for such offering by the Holders;

(ii) if the Holders, together with the holders of any other securities of the Company entitled to inclusion in such registration, propose to sell Registrable Securities and such

other securities (if any) at an aggregate price to the public (net of any underwriters' discounts or commissions) of less than One Million Dollars (US$1,000,000);

(iii) if the Company shall furnish to the Holders a certificate signed by the Chief Executive Officer or Chairman of the Board of the Company stating that in the good faith judgment of the Board of Directors of the Company, it would be seriously detrimental to the Company and its stockholders for such Form S-3 registration to be effected at such time, in which event the Company shall have the right to defer the filing of the Form S-3 registration statement for a period of not more than one hundred twenty (120) days after receipt of the request of the Holder or Holders under this Section 2.3, *provided, however,* that the Company shall not utilize this right more than once in any twelve (12) month period and *provided further,* that the Company shall not register any other of its shares during such one hundred twenty (120) day period;

(iv) if the Company has, within the twelve (12) month period preceding the date of such request, already effected one (1) registration on Form S-3 for the Holders pursuant to this Section 2.3; or

(v) in any particular jurisdiction in which the Company would be required to qualify to do business, where not otherwise required, or to execute a general consent to service of process in effecting such registration, qualification or compliance.

(c) Subject to the foregoing, the Company shall use commercially reasonable efforts to file a registration statement covering the Registrable Securities and other securities so requested to be registered as soon as practicable after receipt of the request or requests of the Holders. Registrations

effected pursuant to this Section 2.3 shall not be counted as requests for registration effected pursuant to Section 2.1 or Section 2.2.

2.4 Obligations of the Company.

Whenever required under this Section 2 to effect the registration of any Registrable Securities, the Company shall, as expeditiously as reasonably possible:

(a) prepare and file with the SEC a registration statement with respect to such Registrable Securities and use commercially reasonable efforts to cause such registration statement to become effective, and, upon the request of the Holders of a majority of the Registrable Securities registered thereunder, keep such registration statement effective for a period of up to ninety (90) days or, if earlier, until the distribution contemplated in the Registration Statement has been completed; *provided*, *however*, that (i) such ninety (90) day period shall be extended for a period of time equal to the period the Holder refrains from selling any securities included in such registration at the request of an underwriter of Common Stock (or other securities) of the Company; and (ii) in the case of any registration of Registrable Securities on Form S-3 which are intended to be offered on a continuous or delayed basis, such ninety (90) day period shall be extended, if necessary, to keep the registration statement effective until all such Registrable Securities are sold, provided that Rule 415, or any successor rule under the Act, permits an offering on a continuous or delayed basis, and provided further that applicable rules under the Act governing the obligation to file a post-effective amendment permit, in lieu of filing a post-effective amendment which (I) includes any prospectus required by Section 20(a)(3) of the Act or (II) reflects facts or events representing a material or fundamental change in the information set forth in the registration statement, the incorporation by reference of information required to be included in (I) and (II) above to be contained in periodic reports filed pursuant to Section 23 or Section 15(d) of the 1934 Act in the registration statement;

(b) prepare and file with the SEC such amendments and supplements to such registration statement and the prospectus used in connection with such registration statement as may be necessary to comply with the provisions of the Act with respect to the disposition of all securities covered by such registration statement;

(c) furnish to each Holder (i) a draft copy of the registration statement, and (ii) such numbers of copies of a prospectus, including a preliminary prospectus, in conformity with the requirements of the Act, and such other documents as it may reasonably request in order to facilitate the disposition of Registrable Securities owned by it;

(d) use commercially reasonable efforts to register and qualify the securities covered by such registration statement under such other securities or "blue sky" laws of such jurisdictions as shall be reasonably requested by the Holders, provided that the Company shall not be required in connection therewith or as a condition thereto to qualify to do business, where not otherwise required, or to file a general consent to service of process in any such states or jurisdictions, unless the Company is already subject to service in such jurisdiction and except as may be required by the Act;

(e) in the event of any underwritten public offering, enter into and perform its obligations under an underwriting agreement, in usual and customary form, with the managing underwriter of such offering. Each Holder participating in such underwriting shall also enter into and perform its obligations under such an agreement. In connection with any offering involving an underwriting of shares of the Company's capital stock, the Company shall not be required to include any of the Holders' securities in such underwriting unless they accept the terms of the underwriting as agreed upon between the Company and the underwriters selected by the Company and enter into an underwriting agreement in customary form with an underwriter or underwriters selected by the Company. If the total amount of securities, including Registrable Securities, requested by stockholders to be included in such offering exceeds the amount of securities sold other than by the Company that the underwriters determine in their sole discretion is compatible with the success of the offering, then subject to Section 2.1 above, the Company shall be required to include in the offering only that number of such securities, including Registrable Securities, that the underwriters determine in their sole discretion will not jeopardize the success of the offering (the securities so included to be apportioned pro rata among the selling stockholders according to the total amount of securities entitled to be included therein owned by each selling stockholder or in such other proportions as shall mutually be agreed to by such selling stockholders) but in no event shall the amount of securities of the selling Holders included in the offering be reduced below twenty five percent (25%) of the total amount of securities included in such offering, unless such offering is the Initial Public Offering of the Company's securities, in which case the selling stockholders may be excluded if the underwriters make the determination described above. For purposes of the preceding parenthetical concerning apportionment, for any selling stockholder that is a Holder of Registrable Securities and that is an investment fund, partnership, limited liability company or corporation, the partners, members, retired partners, retired members, stockholders and Affiliates of such Holder, or the estates and family members of any such partners, retired partners, members and retired members and any trusts for the benefit of any of the foregoing persons shall be deemed to be a single "selling stockholder", and any pro-rata reduction with respect to such "selling stockholder" shall be based upon the aggregate amount of Registrable Securities owned by all entities and individuals included in such "selling stockholder," as defined in this sentence;

(f) notify each Holder of Registrable Securities covered by such registration statement, at any time when a prospectus relating thereto is required to be delivered under the Act, of (i) the issuance of any stop order by the SEC in respect of such registration statement, or (ii) the happening of any event as a result of which the prospectus included in such registration statement, as then in effect,

includes an untrue statement of a material fact or omits to state a material fact required to be stated therein or necessary to make the statements therein not misleading in the light of the circumstances then existing;

(g) cause all such Registrable Securities registered pursuant hereunder to be listed on each securities exchange on which similar securities issued by the Company are then listed; provided that in the case of a registration effected pursuant to Section 2.1 above, which registration constitutes the Initial Public Offering, the Registrable Securities shall be listed on a national securities exchange or the NASDAQ National Market System;

(h) provide a transfer agent and registrar for all Registrable Securities registered pursuant hereunder and a CUSIP number for all such Registrable Securities, in each case not later than the effective date of such registration; and

(i) use commercially reasonable efforts to furnish, at the request of any Holder requesting registration of Registrable Securities pursuant to this Section 2, on the date that such Registrable Securities are delivered to the underwriters for sale in connection with a registration pursuant to this Section 2, if such securities are being sold through underwriters, or, if such securities are not being sold through underwriters, on the date that the registration statement with respect to such securities becomes effective, an opinion, dated as of such date, of the counsel representing the Company for the purposes of such

registration, in form and substance as is customarily given to underwriters in an underwritten public offering and reasonably satisfactory to a majority in interest of the Holders requesting registration, addressed to the underwriters and to the Holders requesting registration of Registrable Securities.

2.5 Information from Holder.

(a) It shall be a condition precedent to the obligations of the Company to take any action pursuant to this Section 2 with respect to the Registrable Securities of any selling Holder that such Holder shall furnish to the Company such information regarding itself, the Registrable Securities held by it, and the intended method of disposition of such securities as shall be reasonably required to effect the registration of such Holder's Registrable Securities.

(b) The Company shall have no obligation with respect to any registration requested pursuant to Section 2.1 if, due to the operation of Section 2.5(a), the number of shares or the anticipated aggregate offering price of the Registrable Securities to be included in the registration does not equal or exceed the number of shares or the anticipated aggregate offering price required to originally trigger the Company's obligation to initiate such registration as specified in Section 2.1(a).

2.6 Expenses of Registration.

(a) All expenses other than underwriting discounts and commissions incurred in connection with registrations, filings or qualifications pursuant to Sections 2.1 and 2.2, including, without limitation, all registration, filing and qualification fees (including "blue sky" fees), printers' and accounting fees, fees and disbursements of one counsel for the selling Holders (not to exceed US$25,000) shall be borne by the Company. Notwithstanding the foregoing, the Company shall not be required to pay for any expenses of any registration proceeding begun pursuant to Section 2.1 if the registration request is subsequently withdrawn at the request of the Holders of a majority of the Registrable Securities to be registered (in which case all participating Holders shall bear such expenses pro rata based upon the number of Registrable Securities that were to be registered in the withdrawn registration), unless, in the case of a registration requested under Section 2.1, the Holders of a majority of the Registrable Securities agree to forfeit their right to one demand registration pursuant to Section 2.1,

provided, however, that if at the time of such withdrawal, the Holders have learned of a material adverse change in the condition, business or prospects of the Company from that known to the Holders at the time of their request and have withdrawn the request with reasonable promptness following disclosure by the Company of such material adverse change, then the Holders shall not be required to pay any of such expenses and shall retain their rights pursuant to Section 2.1.

(b) All expenses other than underwriting discounts and commissions incurred in connection with the first two (2) registrations, filings or qualifications pursuant to Section 2.3, including, without limitation, all registration, filing and qualification fees (including "blue sky" fees), printers' and accounting fees, fees and disbursements of one counsel for the selling Holders (not to exceed US$25,000) shall be borne by the Company. Notwithstanding the foregoing, the Company shall not be required to pay for any expenses of any registration proceeding begun pursuant to Section 2.3 if the registration request is subsequently withdrawn at the request of the Holders of a majority of the Registrable Securities to be registered (in which case all participating Holders shall bear such expenses pro rata based upon the number of Registrable Securities that were to be registered in the withdrawn registration), unless the Holders of a majority of the Registrable Securities agree to forfeit their right to have the Company bear the expenses of one (1) registration pursuant to Section 2.3; *provided, however,* that if at the time of such withdrawal, the Holders have learned of a material adverse change in the condition, business or prospects of the Company from that known to the Holders at the time of their request and have withdrawn the request with reasonable promptness following disclosure by the Company of such material adverse change, then the Holders shall not be required to pay any of such expenses and shall retain their rights pursuant to Section 2.3. Except as provided in the immediately preceding sentence, all expenses incurred in connection with the first two (2) registrations requested pursuant to Section 2.3, including, without limitation, all registration, filing and qualification fees (including "blue sky" fees), printers' and accounting fees, fees and disbursements of counsel for the Company and the fees and disbursements of counsel for the selling Holder or Holders, shall be borne by the Company.

2.7 Delay of Registration.

No Holder shall have any right to obtain or seek an injunction restraining or otherwise delaying any such registration as the result of any controversy that might arise with respect to the interpretation or implementation of this Section 2.

2.8 Indemnification.

In the event any Registrable Securities are included in a registration statement under this Section 2:

(a) To the extent permitted by law, the Company will indemnify and hold harmless each Holder, the partners or officers, directors and stockholders of each Holder, legal counsel and accountants for each Holder, any underwriter (as defined in the Act) for such Holder and each person, if any, who controls such Holder or underwriter, within the meaning of the Act or the 1934 Act, against any losses, claims, damages or liabilities (joint or several) to which they may become subject under the Act, the 1934 Act or any state securities laws, insofar as such losses, claims, damages or liabilities (or actions in respect thereof) arise out of or are based upon any of the following statements, omissions or violations (collectively a "**Violation**"): (i) any untrue statement or alleged untrue statement of a material fact contained in such registration statement, including any preliminary prospectus or final prospectus contained therein or any amendments or supplements thereto, (ii) the omission or alleged omission to state therein a material fact required to be stated therein, or necessary to make the statements therein not misleading, or (iii) any violation or alleged violation by the Company of the Act, the 1934 Act, any state

securities laws or any rule or regulation promulgated under the Act, the 1934 Act or any state securities laws; and the Company will reimburse each such Holder, partner, officer, director, stockholder, counsel, accountant, underwriter or controlling person for any legal or other expenses reasonably incurred by them in connection with investigating or defending any such loss, claim, damage, liability or action; *provided, however,* that the indemnity agreement contained in this Section 2.8(a) shall not apply to amounts paid in settlement of any such loss, claim, damage, liability or action if such settlement is effected without the consent of the Company (which consent shall not be unreasonably withheld), nor shall the Company be liable in any such case for any such loss, claim, damage, liability or action to the extent that it arises out of or is based upon a Violation that occurs in reliance upon and in conformity with written information furnished expressly for use in connection with such registration by any such Holder, partner, officer, director, stockholder, counsel, accountant, underwriter or controlling person; *provided further, however,* that the foregoing indemnity agreement with respect to any preliminary prospectus shall not inure to the benefit of any Holder, partner, officer, director, stockholder, counsel, accountant or underwriter, or any person controlling such Holder or underwriter, from whom the person asserting any such losses,

claims, damages or liabilities purchased shares in the offering, if a copy of the prospectus (as then amended or supplemented if the Company shall have furnished any amendments or supplements thereto) was not sent or given by or on behalf of such Holder or underwriter to such person, if required by law so to have been delivered, at or prior to the written confirmation of the sale of the shares to such person, and if the prospectus (as so amended or supplemented) would have cured the defect giving rise to such loss, claim, damage or liability.

(b) To the extent permitted by law, each selling Holder, on a several and not joint basis, will indemnify and hold harmless the Company, each of its directors, each of its officers who has signed the registration statement, each person, if any, who controls the Company within the meaning of the Act, legal counsel and accountants for the Company, any underwriter, any other stockholder selling securities in such registration statement and any controlling person of any such underwriter or other stockholder, against any losses, claims, damages or liabilities (joint or several) to which any of the foregoing persons may become subject, under the Act, the 1934 Act or any state securities laws, insofar as such losses, claims, damages or liabilities (or actions in respect thereto) arise out of or are based upon any Violation, in each case to the extent (and only to the extent) that such Violation occurs in reliance upon and in conformity with written information furnished by such Holder expressly for use in connection with such registration; and each such Holder will reimburse any person intended to be indemnified pursuant to this Section 2.8(b) for any legal or other expenses reasonably incurred by such person in connection with investigating or defending any such loss, claim, damage, liability or action; *provided, however,* that the indemnity agreement contained in this Section 2.8(b) shall not apply to amounts paid in settlement of any such loss, claim, damage, liability or action if such settlement is effected without the consent of the Holder (which consent shall not be unreasonably withheld), provided that in no event shall any indemnity under this Section 2.8(b) exceed the net proceeds from the offering received by such Holder.

(c) Promptly after receipt by an indemnified party under this Section 2.8 of actual knowledge of the commencement of any action (including any governmental action), such indemnified party will, if a claim in respect thereof is to be made against any indemnifying party under this Section 2.8, deliver to the indemnifying party a written notice of the commencement thereof and the indemnifying party shall have the right to participate in, and, to the extent the indemnifying party so desires, jointly with any other indemnifying party similarly noticed, to assume the defense thereof with counsel mutually satisfactory to the parties; *provided, however,* that an indemnified party (together with all other indemnified parties that may be represented without conflict by one counsel) shall have the right to retain one separate counsel, with the fees and expenses to be paid by the indemnifying party, if representation of such indemnified party by the counsel retained by the indemnifying party would be inappropriate due to actual or potential differing interests between such indemnified party and any other party represented by such counsel in such proceeding. The failure to deliver written notice to the

indemnifying party within a reasonable time of the commencement of any such action, if prejudicial to its ability to defend such action, shall relieve such indemnifying party of any liability to the indemnified party under this Section 2.8 to the extent of such prejudice, but the omission to so deliver written notice to the indemnifying party will not relieve it of any liability that it may have to any indemnified party otherwise than under this Section 2.8.

(d) If the indemnification provided for in this Section 2.8 is held by a court of competent jurisdiction to be unavailable to an indemnified party with respect to any loss, liability, claim, damage or expense referred to herein, then the indemnifying party, in lieu of indemnifying such indemnified party hereunder, shall contribute to the amount paid or payable by such indemnified party as a result of such loss, liability, claim, damage or expense in such proportion as is appropriate to reflect the relative fault of and the relative benefits received by the indemnifying party on the one hand and of the indemnified party on the other in connection with the statements or omissions that resulted in such loss, liability, claim, damage or expense, as well as any other relevant equitable considerations, provided that no person guilty of fraud shall be entitled to contribution. The relative fault of the indemnifying party and of the indemnified party shall be determined by reference to, among other things, whether the untrue or alleged untrue statement of a material fact or the omission to state a material fact relates to information supplied by the indemnifying party or by the indemnified party and the parties' relative intent, knowledge, access to information, and opportunity to correct or prevent such statement or omission. The relative benefits received by the indemnifying party and the indemnified party shall be determined by reference to the net proceeds and underwriting discounts and commissions from the offering received by each such party. In no event shall any contribution under this Section 2.8(d) exceed the net proceeds from the offering received by such Holder, less any amounts paid under Section 2.8(b).

(e) Notwithstanding the foregoing, to the extent that the provisions on indemnification and contribution contained in the underwriting agreement entered into in connection with the underwritten public offering are in conflict with the foregoing provisions, the provisions in the underwriting agreement shall control.

(f) The obligations of the Company and Holders under this Section 2.8 shall survive the completion of any offering of Registrable Securities in a registration statement under this Section 2, and otherwise.

2.9 Reports Under Securities Exchange Act of 1934.

With a view to making available to the Holders the benefits of Rule 144 promulgated under the Act and any other rule or regulation of the SEC that may at any time permit a Holder to sell securities of the Company to the public without registration or pursuant to a registration on Form S-3, the Company agrees to:

(a) make and keep public information available, as those terms are understood and defined in SEC Rule 144, at all times after ninety (90) days after the effective date of the Initial Public Offering;

(b) take such action, including the voluntary registration of its Common Stock under Section 22 of the 1934 Act, as is necessary to enable the Holders to utilize Form S-3 for the sale of their Registrable Securities, such action to be taken as soon as practicable after the end of the fiscal year in which the first registration statement filed by the Company for the offering of its securities to the general public is declared effective;

(c) file with the SEC in a timely manner all reports and other documents required of the Company under the Act and the 1934 Act; and

(d) furnish to any Holder, so long as the Holder owns any Registrable Securities, forthwith upon request (i) a written statement by the Company that it has complied with the reporting requirements of SEC Rule 144 (at any time after ninety (90) days after the effective date of the Initial Public Offering), the Act and the 1934 Act (at any time after it has become subject to such reporting requirements), or that it qualifies as a registrant whose securities may be resold pursuant to Form S-3 (at any time after it so qualifies), (ii) a copy of the most recent annual or quarterly report of the Company and such other reports and documents so filed by the Company, and (iii) such other information as may be reasonably requested in availing any Holder of any rule or regulation of the SEC that permits the selling of any such securities without registration or pursuant to such form.

2.10 Assignment of Registration Rights.

The rights to cause the Company to register Registrable Securities pursuant to this Section 2 may be assigned (but only with all related obligations) by a Holder to a transferee, member, retired member or assignee of such securities that (i) is a subsidiary, Affiliate, parent, partner, limited partner, retired partner or stockholder of a Holder, (ii) is a Holder's immediate family member (parent, step-parent, spouse, registered domestic partner, child or step-child) or trust for the benefit of an individual Holder, or (iii) after such assignment or transfer, holds at least two hundred fifty thousand (250,000) shares of Registrable Securities (subject to appropriate adjustment for recapitalizations) provided: (a) the Company is, within a reasonable time after such transfer, furnished with written notice of the name and address of such transferee or assignee and the securities with respect to which such registration rights are being assigned; (b) such transferee or assignee agrees in writing, a copy of which writing is provided to the Company at the time of transfer, to be bound by and subject to the terms and conditions of this Agreement, including without limitation the provisions of Section 2.12, below; and (c) such assignment shall be effective only if immediately following such transfer the further disposition of such securities by the transferee or assignee is restricted under the Act. For the purposes of determining the number of shares of Registrable Securities held by a transferee or assignee, the holdings of transferee and assignee (i) that is a subsidiary, parent, partner, limited partner, retired partner, member, retired member or stockholder of a Holder; (ii) that is otherwise an Affiliate of the Holder, (iii) who is a family member of a Holder, or (iv) that is a trust for the benefit of an individual Holder or such Holder's family member, shall be aggregated together and with those of the assigning Holder; provided that all assignees and transferees who would not qualify individually for assignment of registration rights shall have a single attorney-in-fact for the purpose of exercising any rights, receiving notices or taking any action under this Section 2.

2.11 Limitations on Subsequent Registration Rights.

From and after the date of this Agreement, the Company shall not, without the prior written consent of the Holders of a majority of the outstanding Registrable Securities, enter into any agreement with any holder or prospective holder of any securities of the Company that would allow such holder or prospective holder (a) to include such securities in any registration filed under Section 2.2 hereof, unless under the terms of such agreement, such holder or prospective holder may include such securities in any such registration only to the extent that the inclusion of such securities will not reduce the amount of the Registrable Securities of the Holders that are included or (b) to make a demand registration which could result in such registration statement being declared effective prior to the date set forth in Section 2.1(a) or within one hundred twenty (120) days of the effective date of any registration effected pursuant to Section 2.1.

2.12 "Market Stand-Off" Agreement.

(a) Each Holder hereby agrees that it will not, directly or indirectly, without the prior written consent of the Company and the managing underwriter, during the period commencing on the date of the final prospectus relating to the Initial Public Offering by the Company and ending on the date specified by the Company and the managing underwriter (such period not to exceed one hundred eighty (180) days) (i) lend, offer, pledge, sell, contract to sell, sell any option or contract to purchase, purchase any option or contract to sell, grant any option, right or warrant to purchase, or otherwise transfer or dispose of, directly or indirectly, any shares of Common Stock or any securities convertible into or exercisable or exchangeable for Common Stock (whether such shares or any such securities are now owned by the Holder or are hereinafter acquired), or (ii) enter into any swap or other arrangement that transfers to another, in whole or in part, any of the economic consequences of ownership of the Common Stock, whether any such transaction described in clause (i) or (ii) above is to be settled by delivery of Common Stock or such other securities, in cash or otherwise. The foregoing provisions of this Section 2.12 shall not apply to the sale of any shares to an underwriter pursuant to an underwriting agreement, and shall only be applicable to the Holders if all officers and directors and greater than five percent (5%) stockholders of the Company enter into similar agreements. The underwriters in connection with the Initial Public Offering by the Company are intended third party beneficiaries of this Section 2.12 and shall have the right, power and authority to enforce the provisions hereof as though they were a party hereto; further, each Holder hereby agrees to enter into written agreement with such underwriters containing terms substantially equivalent to the terms of this Section 2.12, and each Holder hereby agrees that such underwriters shall be entitled to require each such Holder to enter into such a written agreement. Notwithstanding the foregoing, nothing in this Section 2.12 shall prevent a Holder from making a transfer of any Common Stock that was listed on a national stock exchange, actively traded over-the-counter or traded on the NASDAQ National Market at the time it was acquired by the Holder or was acquired by such Holder pursuant to Rule 144A of the Act, including any shares acquired in the Initial Public Offering by the Company.

(b) In order to enforce the foregoing covenant, the Company may impose stop-transfer instructions with respect to the Registrable Securities of each Holder (and the shares or securities of every other person subject to the foregoing restriction) until the end of such period.

2.13 Termination of Registration Rights.

No Holder shall be entitled to exercise any right provided for in this Section 2 after five (5) years following the consummation of the Initial Public Offering or, as to any Holder, such earlier time at which all Registrable Securities held by such Holder (and any Affiliate of the Holder with whom such Holder must aggregate its sales under Rule 144) can be sold in any ninety (90) day period without registration in compliance with Rule 144 of the Act.

3. VCO Rights.

3.1 Board Observer Rights. Subject to the specific terms and conditions set forth in this Section 3.1, VCO shall be entitled to designate one observer (the "**VCO Representative**") to the Board of Directors of the Company, which VCO Representative shall be reasonably acceptable to the Board of Directors and the Chief Executive Officer of the Company.

(a) Subject to Sections 3.1(c)-(d), below, the VCO Representative shall be entitled to attend and participate, and shall be invited to attend and participate, at VCO's sole expense, in all meetings of the Board of Directors (whether such meetings are in person, by telephone, or otherwise) in a non-voting capacity.

(b) Subject to Sections 3.1(c)-(d), below, the Company shall provide the VCO Representative copies of all notices, minutes, consents and other materials that it provides to the Board of Directors at the same time and in the same manner as such materials are provided to the Board of Directors.

(c) VCO and the VCO Representative shall maintain as confidential all financial, confidential and proprietary information of the Company obtained by them as a result of the rights set forth in Sections 3.1(a)-(b), above ("**Confidential Information**"), and shall not disclose the same to any third party without the prior express written consent of the Company. Further, VCO and the VCO Representative represent and agree that Confidential Information shall not be made available to any Affiliate of VCO or any Person who is a competitor or customer of, or vendor to, the Company, or any Affiliate or associate of such Person, without the prior express written consent of the Company.

(d) VCO acknowledges that the VCO Representative is a non-voting observer and as such, the Company reserves the right to withhold all or part of any information or exclude access to any meeting or portion thereof if the Company reasonably believes that such withholding or exclusion is reasonably necessary to preserve the attorney-client privilege, to avoid conflicts of interest or for other similar reasons.

(e) The rights granted pursuant to this Section 3.1 shall be effective until the earlier to occur of: (i) such time as VCO holds less than one and one-half percent (1½%) of the Common Stock then outstanding; (ii) a VCO Designee (as defined below) is appointed to the Board of Directors of the Company pursuant to Section 3.2, below; (iii) the consummation of an Initial Public Offering; (iv) the sale, transfer, or other disposal of all or substantially all of the Company's assets; or (v) the Company's merger with or into or consolidation with any other entity (other than a wholly-owned subsidiary of the Company) or the consummation of any other transaction or series of related transactions in which more than fifty percent (50%) of the voting power of the Company is disposed of and the Company is not the survivor.

(f) VCO may not assign the rights set forth in this Section 3.1 without the prior written consent of the Company.

3.2 Board Seat. If (i) the Company sells securities of the Company to a Competitor (as defined below), and (ii) the Company grants such Competitor a right to designate a director to serve on the Board of Directors of the Company, and (iii) VCO, upon the closing of such transaction with such Competitor, after giving effect thereto, holds or shall hold at least one and one-half percent (1½%) of the Common Stock on a fully-diluted basis, then:

(a) the Board of Directors of the Company shall increase the number of directors on the Board by one (1) and appoint a representative designated by VCO ("**VCO Designee**") to serve in the new director position until such time as his or her successor may be elected; and

(b) MHC and any permitted assigns or transferees thereof shall vote at regular or special meetings of stockholders and give written consent with respect to such number of shares of Preferred Stock and Common Stock then owned by them (or as to which they have voting power) as may be necessary to elect the VCO Designee to the Board of Directors.

(c) The rights granted pursuant to this Section 3.2 shall be effective until the earlier to occur of: (i) such time as VCO holds less than one and one-half percent (1½%) of the Common Stock then outstanding; (ii) the consummation of an Initial Public Offering; (iii) the sale, transfer, or other disposal of all or substantially all of the Company's assets; or (iv) the Company's merger with or into or

consolidation with any other entity (other than a wholly-owned subsidiary of the Company) or the consummation of any other transaction or series of related transactions in which more than fifty percent (50%) of the voting power of the Company is disposed of and the Company is not the survivor.

(d) VCO may not assign the rights set forth in this Section 3.2 without the prior written consent of the Company, which consent will not be unreasonably withheld or delayed.

3.3 Put Option. If, pursuant to a transaction or any series of related transactions with or involving a Competitor, VCO's percentage interest in the Company is diluted such that VCO holds less than one and one-half percent (1½%) of the Common Stock then outstanding, then VCO shall have the right to put any remaining shares of VCO Common Stock to the Company, in which case the Company shall be obligated to purchase such shares at the per-share price paid by the Competitor in the transaction (or the average per-share price paid by the Competitor in a series of related transactions) that triggers VCO's put option pursuant to this Section 3.3.

3.4 Superior Rights. Absent a compelling business reason to do so, the Company agrees that it will not, pursuant to any transaction with a Competitor, grant such Competitor contractual rights superior to those granted herein to VCO with respect to access to Company information, inspection rights, Board of Directors representation, preemptive rights to acquire Company securities, or other similar rights. If, however, pursuant to any transaction with a Competitor, such Competitor is granted contractual rights superior to those granted to VCO herein, the Company will grant to VCO the same contractual rights afforded to such Competitor, to the extent the Company is legally able to do so.

3.5 Definition of "Competitor".

(a) For purposes of this Section 3, "**Competitor**" means, as of any date of determination, (1) any Person that (a) individually or together with any Affiliates of such Person, has revenues (including royalties) from the sale of basic or commercial wheat seed during the fiscal year immediately preceding such date of determination (i) totaling in excess of Five Million Dollars (US$5,000,000) or its equivalent for revenues in the United States, or (ii) totaling in excess of Ten Million Dollars (US$10,000,000) or its equivalent for revenues worldwide; or (b) is engaged in the sale of seed for field crops, and that, individually or together with any Affiliates of such Person, had seed revenues totaling in excess of Fifty Million Dollars (US$50,000,000) or its equivalent for revenues worldwide during the fiscal year immediately preceding such date of determination; or (c) is engaged in research and development with respect to field seed crops, and that, individually or together with any Affiliates of such Person, expended more than Fifty Million Dollars (US$50,000,000) or its equivalent on such research and development with respect to field seed crops during the fiscal year immediately preceding such date of determination; and (2) in each case of (a), (b), or (c), such Person is identified in Schedule 3.5. Schedule 3.5 may be amended in good faith at any time by VCO, subject to the written consent of the Company (which written consent shall not be unreasonably withheld or delayed) to add Persons meeting the foregoing criteria and to delete Persons no longer meeting said criteria, provided that VCO shall, upon request by the Company, provide relevant data to demonstrate that a Person proposed to be added to Schedule 3.5 (or to remain on Schedule 3.5) meets the foregoing criteria. Except as otherwise indicated, each Affiliate of a Person listed on Schedule 3.5 shall be deemed a Competitor for purposes hereof. Subject to Section 3.5(b), only Persons listed on Schedule 3.5, as amended, at the time of any necessary determination of whether such Person is a Competitor (or whether an Affiliate of such Person is a Competitor) shall be determined to be Competitors for purposes of this Agreement.

(b) If a Person that is known or reasonably should be known by the Company to be engaged in the sale of seed for field crops is not listed in Schedule 3.5, prior to completing any transaction with such Person, the Company shall request, in a written notice, a

determination from VCO as to whether such Person meets the criteria in Section 3.5(a) (and is thus a "Competitor" for purposes of this Agreement). VCO shall provide its determination to the Company within ten (10) Business Days from the effective date of such notice. If VCO determines such Person to be a "Competitor" for purposes of this Agreement, Schedule 3.5 shall be amended to add such Person, provided that VCO shall, upon request by the Company, provide relevant data to demonstrate that such Person meets the foregoing criteria. If VCO determines that such Person does not meet the foregoing criteria, or if VCO does not timely provide a determination to the Company, such Person shall not be deemed to be a "Competitor" for purposes of this Agreement. For purposes of this Section 3.5(b) only, "**Business Day**" means any day other than a Saturday, Sunday or other day on which banks in France are permitted or required by applicable law to close.

(c) All U.S. Dollar amounts indicated in this Section 3.5 shall be adjusted annually based on the United States Department of Labor Bureau of Labor Statistics Consumer Price Index for all urban consumers, with May 2010 as the benchmark.

4. Board Seat.

The parties to this Agreement and any permitted assigns or transferees shall vote at regular or special meetings of stockholders and give written consent with respect to such number of shares of Preferred Stock then owned by them (or as to which they have voting power) as may be necessary to elect one (1) representative to the Board of Directors of Company designated by the holders of a majority of the Primary Non-Exeter Preferred.

5. Covenants of the Company.

5.1 Delivery of Financial Statements. The Company shall deliver to each Holder holding at least one hundred fifty thousand (150,000) (appropriately adjusted for any recapitalizations) shares of Registrable Securities:

(a) as soon as practicable, but in any event within two hundred seventy (270) days after the end of each fiscal year of the Company, an income statement for such fiscal year, a balance sheet of the Company and statement of stockholder's equity as of the end of such year, and a statement of cash flows for such year, such year-end financial reports to be in reasonable detail, prepared in accordance with generally accepted accounting principles ("**GAAP**"), and audited and certified by independent public accountants of nationally recognized standing selected by the Company;

(b) as soon as practicable, but in any event within forty-five (45) days after the end of each quarter of each fiscal year of the Company, an unaudited income statement, statement of cash flows for such fiscal quarter and an unaudited balance sheet as of the end of such fiscal quarter;

(c) with respect to the financial statements called for in Section 5.1(b), an instrument executed by the Vice President of Finance or the President of the Company certifying that such financials were prepared in accordance with GAAP consistently applied with prior practice for earlier periods (with the exception of footnotes and year-end adjustments that may be required by GAAP) and fairly present the financial condition of the Company and its results of operation for the period specified, subject to year-end audit adjustment;

(d) as soon as practicable, prior to the end of each fiscal year, a projected operating budget and business plan for the next fiscal year, including statements setting forth sources and applications of funds and, as soon as prepared, any other budgets or revised budgets prepared by the Company; and

(e) such other information relating to the financial condition (including material changes), business, prospects or corporate affairs of the Company as such Holder or any assignee of such Holder may from time to time reasonably request, or promptly after transmission or occurrence (but in any event within ten (10) days), other reports, including any non-routine communications with shareholders or the financial community, the Company's accountants, auditors and business consultants, governmental agencies and authorities, any reports filed by the Company or its officers, directors and representatives with any securities exchange or the SEC and notice of any event which would have a significant effect on the Company's business prospects or financial condition or on the Holders' investments, *provided, however,* that the Company shall not be obligated to provide information that it deems in good faith to be a trade secret or similar confidential information, and provided further that the Company may require the Holder to execute a confidentiality and nondisclosure agreement prior to disclosure of any such information.

5.2 Inspection.

The Company shall permit each Holder holding at least one hundred fifty thousand (150,000) (appropriately adjusted for any recapitalizations) shares of Registrable Securities, at such Holder's expense, to visit and inspect the Company's properties, to examine its books of account and records and to discuss the Company's affairs, finances and accounts with its officers, all at such reasonable times as may be reasonably requested by the Holder; *provided*, *however,* that the Company shall not be obligated pursuant to this Section 5.2 to provide access to any information that it reasonably considers to be a trade secret or similar confidential information, and provided further that the Company may require the Holder to execute a confidentiality and nondisclosure agreement prior to any such visit and inspection.

5.3 Right of First Offer.

Subject to the terms and conditions specified in this Section 5.3, the Company hereby grants to each Holder holding any shares of Registrable Securities (each, an "**Eligible Investor**") a right of first offer with respect to future sales by the Company of its Shares (as hereinafter defined). For purposes of this Section 5.3, "Eligible Investor" includes any Affiliates of an Eligible Investor. An Eligible Investor shall be entitled to apportion the right of first offer hereby granted it among itself and its Affiliates in such proportions as it deems appropriate, so long as such apportionment does not cause the loss of the exemption under Section 4(2) of the Act or any similar exemption under applicable state securities laws in connection with such sale of Shares by the Company. Notwithstanding the foregoing, the Company disclaims any obligation to notify or otherwise apprise any such Affiliate of any offer made or rights held hereby unless such Affiliate is specifically identified by a Holder and disclosed to the Company in writing, and the Company disclaims any liability with respect to any apportionment made by any Holder hereby.

Each time the Company proposes to offer any shares of, or securities convertible into or exchangeable or exercisable for any shares of, any class of its capital stock (the "**Shares**"), the Company shall first make an offering of such Shares to each Eligible Investor in accordance with the following provisions:

(a) The Company shall deliver a notice in accordance with Section 6.5 (the "**Notice**") to the Eligible Investors stating (i) its bona fide intention to offer such Shares, (ii) the number of such Shares to be offered, and (iii) the price and terms upon which it proposes to offer such Shares.

(b) By written notification received by the Company, within twenty (20) calendar days after receipt of the Notice, the Eligible Investor may elect to purchase or obtain, at the price and on the terms specified in the Notice, up to that portion of such Shares that equals the proportion that

the number of shares of Common Stock issued and held, and issuable upon conversion of the Preferred Stock then held, by such Eligible Investor bears to the total number of shares of Common Stock then outstanding on a fully-diluted basis. The Company shall promptly, in writing, inform each Eligible Investor which purchases all the shares available to it ("**Fully-Exercising Eligible Investor**") of any other Eligible Investor's failure to do likewise. During the ten (10) day period commencing after receipt of such information, each Fully-Exercising Eligible Investor shall be entitled to obtain that portion of the Shares for which Eligible Investors were entitled to subscribe but which were not subscribed for by the Eligible Investors which is equal to the proportion that the number of shares of Common Stock issued and held, or issuable upon conversion of Preferred Stock then held, by such Fully-Exercising Eligible Investor bears to the total number of shares of Common Stock issued and held, or issuable upon conversion of Preferred Stock then held, by all Fully-Exercising Eligible Investors who wish to purchase some of the unsubscribed shares.

(c) If all Shares that Eligible Investors are entitled to obtain pursuant to Section 5.3(b) are not elected to be obtained as provided in Section 5.3(b) hereof, the Company may, during the one hundred eighty (180) day period following the expiration of the period provided in Section 5.3(b) hereof, offer the remaining unsubscribed portion of such Shares to any person or persons at a price not less than, and upon terms no more favorable to the offeree than those specified in the Notice. If the Company does not enter into an agreement for the sale of the Shares within such period, or if such agreement is not consummated within sixty (60) days of the execution thereof, the right provided hereunder shall be deemed to be revived and such Shares shall not be offered unless first reoffered to the Eligible Investors in accordance herewith.

(d) The right of first offer in this Section 5.3 shall not be applicable to:

(i) the issuance of shares of securities pursuant to a split or subdivision of the outstanding shares of Common Stock or the determination of holders of Common Stock entitled to receive a dividend or other distribution payable in additional shares of Common Stock or other securities or rights convertible into, or entitling the holder thereof to receive directly or indirectly, additional shares of Common Stock (hereinafter referred to as "**Common Stock Equivalents**") without payment of any consideration by such holder for the additional shares of Common Stock or the Common Stock Equivalents (including the additional shares of Common Stock issuable upon conversion or exercise thereof);

(ii) the issuance of shares of Common Stock or options therefor to employees, consultants, officers, directors or vendors (if in transactions with primarily non-financing purposes) of the Company directly or pursuant to a stock option plan or restricted stock purchase plan approved by the Board of Directors of the Company;

(iii) the issuance of shares of Common Stock (A) in a bona fide, firmly underwritten public offering under the Act before which or in connection with which all outstanding shares of preferred stock will be automatically converted to Common Stock, or (B) upon exercise of warrants or rights granted to underwriters in connection with such a public offering;

(iv) the issuance of shares of Common Stock pursuant to the conversion or exercise of convertible or exercisable securities outstanding as of the date hereof or subsequently issued pursuant to this Section 5.3;

(v) the issuance of shares of Common Stock in connection with a bona fide business acquisition of or by the Company, whether by merger, consolidation, sale of assets, sale or exchange of stock or otherwise, each as approved by the Board of Directors of the Company;

(vi) the issuance or sale of stock, warrants or other securities or rights to persons or entities with which the Company has business relationships provided such issuances are for other than primarily equity financing purposes and provided that at the time of any such issuance, the aggregate of such issuance and similar issuances in the preceding twelve (12) month period do not exceed five percent (5%) of the then outstanding Common Stock of the Company (assuming full conversion and exercise of all convertible and exercisable securities), unless approved by the Board of Directors; or

(vii) shares of Common Stock issued or issuable in connection with any transaction where such securities so issued are exempted from the right of first offer in this Section 5.3 by the affirmative vote of the holders of a majority of the Primary Non-Exeter Preferred; *provided, however*, that in the event of any issuance contemplated in this Section 5.3(d) to, or for the benefit of, any Competitor, VCO shall be entitled to exercise its right of first offer in respect of such issuance.

(e) In addition to the foregoing, the right of first offer in this Section 5.3 shall not be applicable with respect to any Eligible Investor and any subsequent securities issuance, if (i) at the time of such subsequent securities issuance, the Eligible Investor is not an "accredited investor," as that term is then defined in Rule 501(a) under the Act, and (ii) such subsequent securities issuance is otherwise being offered only to accredited investors.

(f) The right of first offer set forth in this Section 5.3 may not be assigned or transferred, except, other than with respect to a competitor of the Company, as reasonably determined by the Company, that (i) such right is assignable by each Eligible Investor to any Affiliate of such Eligible Investor, and (ii) such right is assignable to a transferee or assignee who holds after such transfer at least two hundred fifty thousand (250,000) shares of Registrable Securities (subject to appropriate adjustment for any recapitalization).

5.4 Termination of Certain Covenants.

The covenants set forth in this Section 5 shall terminate and be of no further force or effect upon the consummation of the Initial Public Offering. The covenants set forth in Section 5.1 and Section 5.2 shall terminate and be of no further force or effect at such time as the Company is required to file reports pursuant to Section 15(d) of the 1934 Act. Moreover, this Agreement shall terminate and be of no further force or effect upon the consummation of a transaction or series of related transactions which are deemed to be a liquidation, dissolution or winding up of the Company pursuant to the Company's Amended and Restated Articles of Incorporation, as such Amended and Restated Articles of Incorporation may be amended from time to time.

6. Miscellaneous.

6.1 Successors and Assigns.

Except as otherwise provided herein, the terms and conditions of this Agreement shall inure to the benefit of and be binding upon the respective successors and assigns of the parties (including transferees of any shares of Registrable Securities). Nothing in this Agreement, express or implied, is intended to confer upon any party other than the parties hereto or their respective successors and assigns any rights, remedies, obligations, or liabilities under or by reason of this Agreement, except as expressly provided in this Agreement.

6.2 Governing Law; Venue.

This Agreement is to be construed in accordance with and governed by the internal laws of the State of Arizona without giving effect to any choice of law rule that would cause the application of the laws of any jurisdiction other than the internal laws of the State of Arizona to the rights and duties of the parties. All disputes and controversies arising out of or in connection with this Agreement shall be resolved exclusively by the state and federal courts located in Maricopa County in the State of Arizona, and each party hereto agrees to submit to the jurisdiction of said courts and agrees that venue shall lie exclusively with such courts.

6.3 Counterparts.

This Agreement may be executed in two or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument.

6.4 Titles and Subtitles.

The titles and subtitles used in this Agreement are used for convenience only and are not to be considered in construing or interpreting this Agreement.

6.5 Notices.

Except as may be otherwise provided herein, all notices, requests, waivers and other communications made pursuant to this Agreement shall be in writing and shall be conclusively deemed to have been duly given (a) when hand delivered to the other party; (b) when sent by facsimile to the number set forth below each party's signature if sent between 8:00 a.m. and 5:00 p.m. recipient's local time on a business day, or on the next business day if sent by facsimile to the number set forth below if sent other than between 8:00 a.m. and 5:00 p.m. recipient's local time on a business day; (c) if to an address within the United States, three (3) business days after deposit in the U.S. mail with first class or certified mail receipt requested postage prepaid and addressed to the other party at the address set forth below; (d) if to an address outside the United States, seven (7) business days after deposit in the U.S. mail with first class postage prepaid and addressed to the other party at the address set forth below; or (e) the next business day after deposit with a national overnight delivery service, postage prepaid, addressed to the parties as set forth below with next business day delivery guaranteed, provided that the sending party receives a confirmation of delivery from the delivery service provider. Each person making a communication hereunder by facsimile shall promptly confirm by telephone to the person to whom such communication was addressed each communication made by it by facsimile pursuant hereto but the absence of such confirmation shall not affect the validity of any such communication. A party may change or supplement the addresses given above, or designate additional addresses, for purposes of this Section 6.5 by giving the other party written notice of the new address in the manner set forth above.

6.6 Expenses.

If any action at law or in equity is necessary to enforce or interpret the terms of this Agreement, the prevailing party shall be entitled to reasonable attorney's fees, costs and necessary disbursements in addition to any other relief to which such party may be entitled.

6.7 Amendments and Waivers.

Any term of this Agreement may be amended and the observance of any term of this Agreement may be waived (either generally or in a particular instance and either retroactively or prospectively), only

with the written consent of the Company and the holders of a majority of the Registrable Securities then outstanding; *provided, however,* that no amendment or waiver which adversely affects the holders of less than a majority of the Registrable Securities shall be affected without the prior written consent of the holders of a majority in interest of such Registrable Securities so affected. Any amendment or waiver effected in accordance with this paragraph shall be binding upon each holder of any Registrable Securities, each future holder of all such Registrable Securities and the Company.

6.8 Severability.

If one or more provisions of this Agreement are held to be unenforceable under applicable law, such provision shall be excluded from this Agreement and the balance of the Agreement shall be interpreted as if such provision were so excluded and shall be enforceable in accordance with its terms.

6.9 Aggregation of Stock.

All shares of Registrable Securities held or acquired by entities advised by the same investment adviser and affiliated entities or persons shall be aggregated together for the purpose of determining the availability of any rights under this Agreement.

6.10 Entire Agreement.

This Agreement and the documents referred to herein constitute the entire agreement among the parties with respect to the subject matter hereof, and supersede any prior or concurrent written or verbal statements, representations, and agreements concerning the subject matter hereof, and no party shall be liable or bound to any other party in any manner by any warranties, representations or covenants except as specifically set forth herein or therein, *provided however,* that

all warranties, representations or covenants of Sections 6.1 through 6.9 of the Original Agreement shall survive and remain in effect in accordance with their terms without amendment, notwithstanding the amendment and restatement of the Prior Agreement and this amendment and restatement of the Immediately Preceding Agreement.

* * *

IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the date first above written.

COMPANY:

ARCADIA BIOSCIENCES, INC.

By: **/s/** Eric J. Rey
Name: Eric J. Rey
Title: President & Chief Executive Officer

Address:
Arcadia Biosciences, Inc.
202 Cousteau Place, Suite 200
Davis, CA 95616
USA
Phone: (530) 756-7077
Fax: (530) 756-7027

MORAL HAZARD CORPORATION

By: /s/ John Sperling
Name: John Sperling
Title: Chief Executive Officer

Address:
Moral Hazard Corporation
4835 E. Exeter Blvd.
Phoenix, AZ 85018
USA
Phone: (602) 557-1745
Fax: (602) 735-8506

SIGNATURE PAGE TO AMENDED & RESTATED INVESTORS' RIGHTS AGREEMENT
Dated April 30, 2010

INVESTOR:

VILMORIN & CIE

By: /s/ Emmanuel Rougier
Name: Emmanuel ROUGIER
Title: Chief Operating Officer

Address:
Vilmorin & Cie
4, quai de la Mégisserie
75001 Paris
FRANCE
Phone: + 33 4 73 63 40 95
Fax: +33 4 73 63 40 30

SIGNATURE PAGE TO AMENDED & RESTATED INVESTORS' RIGHTS AGREEMENT
Dated April 30, 2010

SCHEDULE A

INVESTORS

Moral Hazard Corporation
CMEA LP
BASF Venture Capital
Saints Capital
CMEA CLP
Agricapital
Ken Hunt
Trent Colbert and Suzanne Pankey, JT
Vic Knauf (restricted stock)
William D. and Yvonne McCallum
Arnold Bendich and Judith Bendich, TIC
Heller Ehrman VLG
Andrew Prague
Edmund Lang
The Bellow Family Trust UTD
Ilene Lang
Silicon Valley Bank
Fred Hutchinson CRC
Craig W. Johnson
John Robertson
WSGR 401k Plan (FBO Mark Handfelt)
Vilmorin & Cie

SCHEDULE 3.5

VCO COMPETITORS

Monsanto Company
Syngenta International AG
Dow AgroSciences
Pioneer Hybrid International
Bayer AG
BASF (*except* BASF Venture Capital)
KWS SAAT AG

SECURITIES SUBJECT HERETO HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED (THE "ACT"), OR ANY OTHER FEDERAL, PROVINCIAL OR STATE SECURITIES LAWS AND NEITHER SUCH SECURITIES NOR ANY INTEREST THEREIN MAY BE OFFERED, SOLD, PLEDGED, ASSIGNED OR OTHERWISE TRANSFERRED UNLESS (1) A REGISTRATION STATEMENT WITH RESPECT THERETO IS EFFECTIVE UNDER THE ACT AND ANY OTHER APPLICABLE SECURITIES LAWS, OR (2) THE COMPANY RECEIVES AN OPINION OF COUNSEL TO THE OWNER OF SUCH SECURITIES, WHICH COUNSEL AND OPINION ARE REASONABLY SATISFACTORY TO THE COMPANY, THAT SUCH SECURITIES, OR INTEREST THEREIN, MAY BE OFFERED, SOLD, PLEDGED, ASSIGNED OR TRANSFERRED IN THE MANNER CONTEMPLATED WITHOUT AN EFFECTIVE REGISTRATION STATEMENT UNDER THE ACT OR ANY OTHER APPLICABLE SECURITIES LAWS.

NOTE AND WARRANT PURCHASE AGREEMENT

Arcadia Biosciences, Inc., an Arizona corporation
4222 E Thomas Rd, Suite 245
Phoenix, AZ 85018

Ladies and Gentlemen:

1. Subscription.

(a) Mahyco International Pte Ltd., a company formed under the laws of Singapore ("Subscriber"), hereby subscribes to purchase from Arcadia Biosciences, Inc., an Arizona corporation (the "Company"), and the Company hereby agrees to sell to Subscriber, an unsecured US$5,000,000 Convertible Promissory Note in the form attached hereto as Exhibit A (the "Note"), and a Stock Purchase Warrant in the form attached hereto as Exhibit B (the "Warrant") to purchase up to 302,665 shares (the "Warrant Shares") of the Company's common stock, no par value ("Common Stock"), all on the terms and subject to the conditions set forth in this Note and Warrant Purchase Agreement (the "Agreement"), for the aggregate purchase price of US$5,000,000. The parties agree to allocate US$3,026.65 of such aggregate US$5,000,000 purchase price to the Warrant, subject each party's right to adjust its own allocation to properly reflect advice from its auditor post-Closing.

(b) Subscriber shall return two (2) executed, completed copies of this Agreement to the Company at its address set forth above, accompanied by Subscriber's check or wire transfer in the full amount of the purchase price. The Company's wire transfer instructions are set forth on Schedule 1(b) attached hereto.

(c) The Company shall hold a closing (the "Closing") promptly after the Company receives the documents and payment contemplated by Section 1(b). At the Closing, the Company shall issue to Subscriber the Note and the Warrant, each dated the date of Closing, and shall deliver to Subscriber a fully executed copy of this Agreement.

(d) **The Company strongly advises Subscriber to review the Company's financial statements, business, properties and affairs before entering into this Agreement or subscribing for the Note and the Warrant.**

2. Conditions. This subscription is made subject to the following terms and conditions:

(a) The Company shall have executed and delivered this Agreement, and all the representations and warranties set forth herein shall have been true and correct when made and as of the date of the Closing.

(b) Subscriber and its counsel shall have received a true and complete copy of the resolutions adopted by the Board of Directors of the Company authorizing the execution, delivery and performance of this Agreement and the transactions contemplated hereby.

This Agreement shall automatically terminate if the foregoing conditions are not satisfied and the Closing does not occur on or before October 31, 2013.

3. Representations and Warranties of Subscriber. As of the date of issuance to Subscriber of each of the Note, Conversion Shares, Warrant and Warrant Shares (collectively, the "Securities"), Subscriber hereby makes the following representations and warranties to the Company and Subscriber agrees to indemnify, hold harmless, and pay all judgments and claims against the Company from any liability or injury (including, but not limited to, that arising under federal or state securities laws in the United States, Singapore and any other jurisdiction applicable to Subscriber) incurred as a result of any misrepresentation by Subscriber herein or any covenants not performed by Subscriber.

(a) Investor Representations.

(i) Subscriber is the sole and true party-in-interest and is not purchasing for the benefit of any other person.

(ii) Except as expressly set forth in this Agreement, no person or entity has made any representation or warranty with respect to any matter concerning the Company, and Subscriber is purchasing the Securities based solely upon its own investigation and evaluation.

(iii) Subscriber is not a U.S. Person as defined in Rule 902(k), promulgated under the Act.

(iv) Subscriber is aware that an investment in the Securities is highly speculative and subject to substantial risks. Subscriber acknowledges that Subscriber is capable of bearing the high degree of economic risk and burdens of this investment, including, but not limited to, the possibility of the complete loss of the value of the investment and the limited transferability of the Securities, which may make the liquidation of this investment impossible for the indefinite future.

(v) An affiliate of Subscriber has a pre-existing substantive relationship with the Company. In making an investment in the Securities, Subscriber has relied exclusively on information provided by the Company in writing.

(vi) The Securities are being purchased solely for Subscriber's own account, for investment, and are not being purchased with a view to the resale, distribution, subdivision or fractionalization thereof, except pursuant to a registration statement qualified in the United States or pursuant to an available exemption from applicable federal and state securities laws in the United States, Singapore and any other jurisdiction applicable to any such resale or other transaction.

(vii) Subscriber is purchasing the Securities in an "offshore transaction" as defined in Rule 902(h), promulgated under the Act.

(b) Organization, Qualification and Company Power. Subscriber is a company duly formed, validly existing and in good standing under the laws of Singapore. The Company has the company power and authority to execute, deliver and perform this Agreement and the transactions contemplated hereby.

(c) Authorization; Validity. Subscriber has full power and authority to enter into this Agreement and the transactions contemplated hereby. This Agreement, when executed and delivered by Subscriber, will constitute valid and legally binding obligations of Subscriber, enforceable in accordance with their terms, except as limited by applicable bankruptcy, insolvency, reorganization, moratorium, fraudulent conveyance, and any other laws of general application affecting enforcement of creditors' rights generally, and as limited by laws relating to the availability of specific performance, injunctive relief, or other equitable remedies.

(d) No Conflicts, Defaults, etc. The execution, delivery and performance of this Agreement by Subscriber does not (i) conflict with or result in a violation of any of Subscriber's charter documents, or (ii) conflict with, or constitute a default (or an event which, with notice or lapse of time or both, would become a default) under, or give to others any rights of termination, amendment, acceleration or cancellation of any agreement, indenture or instrument to which Subscriber is a party, or result in a violation of any law, rule, regulation, order, judgment or decree applicable to Subscriber.

(e) No Consents. No consent, approval, order, or authorization of, or registration, qualification, designation, declaration, notice or filing with, any governmental authority, agency or regulatory body of the United States, any state thereof or any foreign jurisdiction is required on the part of Subscriber in connection with its execution and delivery of this Agreement and the consummation of the transactions contemplated hereby.

4. Restrictions on Transferability of Securities. Subscriber understands that:

(a) The Securities are "restricted securities" as defined in Rule 144, promulgated under the Act. In addition to restrictions on resale required by Regulation S (described in clauses (b) through (e) below), the Securities will be subject to all additional restrictions which may be placed on Securities if they were sold to accredited investors who are "U.S. Persons" as defined in Rule 902(k) promulgated under the Act.

(b) The Securities may not be offered or sold to a U.S. Person or for the account or benefit of a U.S. Person (other than a distributor) for a period of one year after their acquisition.

(c) If Securities are offered or sold during the one-year restricted period, any offer or sale will be pursuant to the following conditions:

(i) the purchaser of the Securities (other than a distributor) must certify that it is not a U.S. Person and it is not acquiring the Securities for the account or benefit of any U.S. Person, or is a U.S. Person who purchased securities in a transaction that did not require registration under the Act;

(ii) the purchaser of the Securities (other than a distributor) must agree to resell the Securities only in accordance with the provisions of Regulation S, pursuant to registration under the Act, or pursuant to an available exemption from registration; and

(iii) Subscriber will provide a legal opinion from counsel reasonably acceptable to the Company that the transaction is exempt from registration under applicable U.S. securities laws.

(d) Stop transfer instructions will apply which require the Company to refuse to register any transfer of the Securities not made in accordance with the provisions of Regulation S or other restrictions applicable to the Securities. The Company may require the delivery of an opinion of counsel, certification and/or other information satisfactory to the Company prior to any offer, sale or transfer of the Securities.

(e) Certificates evidencing the Securities shall bear the following, or a substantially similar, legend and such other legends as may be required by applicable securities laws:

"The securities represented by this certificate have not been registered under the Securities Act of 1933 (the "Act"), or any other federal, provincial or state securities laws and neither such securities nor any interest therein may be offered, sold, pledged, assigned or otherwise transferred unless (1) a registration statement with respect thereto is effective under the Act and any other applicable securities laws, or (2) the Company receives an opinion of counsel to the holder of such securities, which counsel and opinion are reasonably satisfactory to the Company, that such securities may be offered, sold, pledged, assigned or transferred in the manner contemplated without an effective registration statement under the Act or any other applicable securities laws."

(f) Subscriber and the Company acknowledge that the representations, warranties and agreements made by them herein shall survive the execution and delivery of this Agreement.

5. Representations and Warranties of the Company. The Company hereby makes the following representations and warranties to Subscriber and the Company agrees to

indemnify, hold harmless and pay all judgments and claims against Subscriber from any liability or injury (including, but not limited to, that arising under federal or state securities laws in the United States, Singapore and any other jurisdiction applicable to the Company) incurred as a result of any misrepresentation by the Company herein or any covenants not performed by the Company.

(a) Organization, Qualifications and Corporate Power. The Company is a corporation duly incorporated, validly existing and in good standing under the laws of the State of Arizona. The Company has the corporate power and authority to (A) execute, deliver and perform this Agreement, (B) issue, sell and deliver the Note and Warrant hereunder, (C) issue, sell and deliver the shares of capital stock issuable upon conversion of the Note (the "Conversion Shares"), and (D) issue, sell and deliver the Warrant Shares issuable upon exercise of the Warrant.

(b) Authorization of Agreements. The execution and delivery by the Company of this Agreement, the Note and the Warrant (collectively, the "Transaction Documents"), the performance by the Company of its obligations hereunder and thereunder, and the issuance, sale and delivery by the Company of the Securities, have been duly authorized by all requisite corporate action. The Note and Warrant have been duly authorized by the Company and, when issued and delivered in accordance with this Agreement, will be validly issued and outstanding. The Conversion Shares and Warrant Shares have been duly authorized by the Company and, when issued and delivered upon conversion of the Note in accordance with its terms and exercise of the Warrant in accordance with its terms, respectively, will be validly issued and outstanding, fully paid and non-assessable.

(c) Validity. The Transaction Documents have each been duly executed and delivered by the Company and constitute legal, valid and binding obligations of the Company enforceable in accordance with their terms (subject to applicable bankruptcy, reorganization, insolvency and similar laws and to moratorium laws from time to time in effect).

(d) Subsidiaries. Except for Anawah, Inc. (the "Subsidiary") and as set forth on Schedule 5(d), the Company does not (a) own of record or beneficially, directly or indirectly, (i) any shares of capital stock or securities convertible into capital stock of any other corporation or (ii) any participating interest in any partnership, joint venture or other non-corporate business enterprise, or (b) control, directly or indirectly, any other business entity. The Subsidiary has been duly incorporated, is validly existing as a corporation in good standing under the laws of Washington, has the corporate power and authority to own its properties and to conduct its business and is duly registered, qualified and authorized to transact business and is in good standing in each jurisdiction in which the conduct of its business or the nature of its properties requires such registration, qualification or authorization. All of the issued and outstanding capital stock of the Subsidiary has been duly authorized and validly issued, is fully paid and non-assessable, and is owned by the Company free and clear of any mortgage, pledge, lien, encumbrance, security interest, claim or equity.

(e) Charter Documents. The Company has delivered to Subscriber complete and current copies of the Company's Amended and Restated Articles of Incorporation, including all amendments thereto (the "Restated Articles"), and the Company's bylaws (the "Bylaws" and,

collectively with the Restated Articles, the "Charter Documents"). The Company is not in violation or default of any provision of its Charter Documents.

(f) Capitalization and Voting Rights. The authorized capital of the Company consists of:

(i) Preferred Stock. 100,000,000 shares of preferred stock, no par value ("Preferred Stock"), of which (i) 68,000,000 shares have been designated Series A Preferred Stock ("Series A Preferred Stock"), 67,063,127 of which are issued and outstanding, (ii) 17,000,000 shares have been designated Series B Preferred Stock ("Series B Preferred Stock"), 16,890,690 of which are issued and outstanding, and (iii) 9,586,346 shares have been designated Series C Preferred Stock ("Series C Preferred Stock") (the Series A Preferred Stock, Series B Preferred Stock and Series C Preferred Stock shall be referred to as the "Preferred Stock"), all of which are issued and outstanding. The rights, privileges and preferences of the Series A Preferred Stock, Series B Preferred Stock and Series C Preferred Stock are as stated in the Restated Articles.

(ii) Common Stock. 135,000,000 shares of Common Stock, of which 8,226,236 shares are issued and outstanding.

(iii) Valid Issuance. The outstanding shares of Common Stock and Preferred Stock are all duly and validly authorized and issued, fully paid and non-assessable, and were issued in accordance with the registration or qualification provisions of the Securities Act of 1933, as amended (the "Act"), and any relevant state securities laws, or pursuant to valid exemptions therefrom.

(iv) Other Rights. Except for (A) the conversion privileges of the Preferred Stock, (B) the rights provided in the Amended and Restated Investors' Rights Agreement, among the Company and the shareholders party thereto (the "Investors' Rights Agreement"), (C) the right of first negotiation set forth in Section 4.2(b) of the Stock Purchase Agreement between the Company and Vilmorin & Cie dated April 30, 2010; (D) the engagement letter between the Company Piper Jaffray that contemplates a private placement of up to US$30 million in equity securities of the Company; and (E) currently outstanding options to purchase 14,731,870 shares of Common Stock granted to employees and other service providers pursuant to the Arcadia Biosciences, Inc. 2006 Stock Plan (the "Stock Plan"), there are no outstanding options, warrants, rights (including conversion or preemptive rights) or agreements for the purchase or acquisition from or by the Company of any shares of its capital stock. The Company has reserved an aggregate of 18,000,000 shares of Common Stock for issuance upon exercise of options or restricted stock purchase awards pursuant to the Stock Plan. Except for certain provisions relating to the election of directors pursuant to the Investors' Rights Agreement, the Company is not a party or subject to any agreement or understanding, and, to the Company's knowledge, there is no agreement or understanding between any Persons and/or entities, which affects or relates to the voting or giving of written consents with respect to any security of the Company.

(g) No Conflicts, Defaults, etc. The execution, delivery and performance of this Agreement by the Company does not (i) conflict with or result in a violation of any of the

Charter Documents, or (ii) conflict with, or constitute a default (or an event which, with notice or lapse of time or both, would become a default) under, or give to others any rights of termination, amendment, acceleration or cancellation of any agreement, indenture or instrument to which the Company is a party, or result in a violation of any law, rule, regulation, order, judgment or decree (including (assuming the accuracy of the representations and warranties of the Subscriber) the United States federal and state securities laws and regulations) applicable to the Company or by which any property or asset of the Company is bound or affected. No event has occurred and no condition exists which, upon notice or the passage of time (or both), would constitute a material default under any material

agreements of the Company or in any material license, permit or authorization to which the Company or any subsidiary is a party or by which any of them may be bound.

(h) No Consents. Except for requisite notices to the Securities and Exchange Commission ("SEC") and under any applicable state "blue sky" laws, no consent, approval, order, or authorization of, or registration, qualification, designation, declaration, notice or filing with, any federal, state, local or foreign governmental authority, agency or regulatory body on the part of the Company is required in connection with its execution and delivery of this Agreement and the consummation of the transactions contemplated hereby.

(i) Absence of Litigation; Compliance with Laws. There is no action, suit, proceeding, inquiry or investigation before or by any court, public board, government agency, self-regulatory organization or body pending or, to the knowledge of the Company, threatened against or affecting the Company, the Subsidiary or any of its directors or officers in their capacities as such. Neither the Company nor the Subsidiary is a party or subject to, and none of its assets is bound by, the provisions of any order, writ, injunction, judgment, or decree of any court or government agency or instrumentality. The Company and the Subsidiary have been since the respective date of their incorporation, and are, in compliance in all material respects with all laws and regulations applicable to them, their properties or assets and have not received any written notice of any violation with respect to any laws or regulations.

(j) Dividends and Distributions; Indebtedness; Material Agreements.

(i) Since December 31, 2012, and except as expressly set forth on Schedule 5(j), there has been no material adverse change in the condition, financial or otherwise, of the Company and the Subsidiary taken as a whole or in their assets, liabilities, properties, profits, results of operations or business, or material loss, destruction or damage to any property of the Company or the Subsidiary, and the Company has not (i) declared, set aside or paid any dividends, or authorized or made any distribution upon or with respect to any class or series of its capital stock, (ii) incurred outside the ordinary course of business any indebtedness for money borrowed or incurred any other liabilities individually in excess of Twenty-Five Thousand Dollars (US$25,000) or in excess of One Hundred Thousand Dollars (US$100,000) in the aggregate, other than the Existing Notes (as defined below) and that certain promissory note dated August 7, 2013 in the principal amount of $2,000,000 issued to the William C. Lewis Trust (the "Lewis Note"), (iii) made any loans or advances to any Person, other than ordinary advances to employees for travel expenses, (iv) except for the Company's negative pledge described in the Lewis Note, sold, exchanged or otherwise disposed of any of its assets or rights, other than the sale of its inventory for fair value in the ordinary course of business or (v) acquired or disposed

of any assets (or any contract or arrangement therefor), or entered into any material transaction otherwise than for fair value in the ordinary course of business. For the purposes of this Section 5(j), all indebtedness, liabilities, agreements, understandings, instruments, contracts and proposed transactions involving the same Person (including Persons the Company has reason to believe are affiliated with each other) shall be aggregated for the purpose of meeting the individual minimum dollar amounts of such subsection.

(ii) The Company is not a guarantor or indemnitor of any indebtedness of any other Person.

(k) Governmental Approvals. No registration or filing with, or consent or approval of or other action by, any federal, state or other governmental agency or instrumentality, domestic or foreign, under laws and regulations thereof is or will be necessary for the valid execution, delivery and performance by the Company of this Agreement, or the issuance, sale and delivery of the Securities.

(l) Real Property; Tangible Assets. The Company does not own any real property. The Company and the Subsidiary have good title to their assets and good title to all leasehold estates, in each case, as are necessary for the operations of the Company and the Subsidiary as now conducted and as presently contemplated to be conducted.

(m) Condition of Properties. All facilities, machinery, equipment, fixtures, vehicles and other properties owned, leased or used by the Company and the Subsidiary are in good operating condition and repair, are reasonably fit and usable for the purposes for which they are being used and are presently contemplated to be used, are adequate and sufficient, in all material respects, for the Company's or the Subsidiary's business as now conducted and as presently contemplated to be conducted and conform in all material respects with all applicable ordinances, regulations and laws.

(n) Intellectual Property Rights.

(i) Subscriber acknowledges that Company has provided to Subscriber a schedule of intellectual property rights that sets forth all of the patents, patent rights, patent applications, trademarks, trademark applications, service marks, service mark applications, trade names, registered copyrights and plant variety protection certificates, and all applications for such that are owned by or registered in the name of the Company or the Subsidiary, or of which the Company or the Subsidiary is a licensor or licensee and for which the Company or the Subsidiary has the right to control prosecution and maintenance of the same. The Company has good and valid title to, and owns free and clear of all liens, or has the exclusive license to use, sell, transfer, license, and sublicense, and has the right to bring actions for the infringement of, all of the Intellectual Property Rights listed on such schedule (the "Company IP Rights"). With respect to each item of the Company IP Rights that is licensed to the Company or the Subsidiary: (i) the license, sublicense or other agreement covering such item is legal, valid, binding, enforceable and in full force and effect and (ii) neither the Company, the Subsidiary nor, to the knowledge of the Company, any other party to such license, sublicense or other agreement, is in breach or default, and no event has occurred which with notice or lapse of

time would constitute a breach or default or permit termination, modification or acceleration thereunder.

(ii) All Company IP Rights are valid and in full force and effect, and no claim is pending or, to the Company's knowledge, threatened to the effect that any of the Company's IP Rights are invalid or unenforceable by the Company or that contests the Company's ownership rights in or license rights to use the Company IP Rights, and there is no reasonable basis for such claim. Neither the present nor proposed use of the Company IP Rights violates or infringes or, to the Company's knowledge, will violate or infringe any rights of any third party including, without limitation, any Intellectual Property Rights of any third party, or any license or other agreement to which the Company or the Subsidiary is a party, and the Company has not received any notice or other claim from any Person asserting any such violation or infringement, nor, to the Company's knowledge, is there any reasonable basis for any such notice of claim. The Company is not aware of any infringement by others of any Company IP Rights or any violation of the confidentiality of any of its proprietary information.

(iii) The Company has taken all reasonable measures to protect and preserve the security, confidentiality and value of its Intellectual Property Rights, including the Company IP Rights. All present and former officers, employees, consultants and independent contractors of the Company have executed a non-disclosure and assignment of inventions agreement sufficient to protect the confidentiality and value of the Company IP Rights and to vest in the Company exclusive ownership of such Company IP Rights, and all such agreements are valid and enforceable and in full force and effect and no such officers, employees, consultants and independent contractors have contested the ownership of any such Company IP Rights by Company and, to the Company's knowledge, there is no reasonable basis for such contesting of ownership rights.

(iv) For purposes of this Agreement, "Intellectual Property Rights" means all intellectual property, including all:

(A) patents, pending applications for patents, and rights to apply for patents in any part of the world;

(B) copyrights, design rights, Internet domain names, and database rights, whether registered or unregistered, and software;

(C) pending trademark and service mark applications, registered trademarks and service marks, registered designations of origin, unregistered trademarks and service marks, including common law trademarks and service marks, rights to trade dress and company names, and in each case with any and all associated goodwill;

(D) plant breeders' rights, including all plant variety protection certificates, and any applications for plant breeders' rights in any part of the world;

(E) genetic material;

(F) inventions and related improvements, if any, processes, designs, formulae, trade secrets, know-how, industrial models, non-public technical and business

information, manufacturing, engineering and technical drawings, and product specifications, if any;

(G) reissues, divisions, continuations, continuations-in-part, renewals, extensions and registrations or foreign counterparts of any of the foregoing; and

(H) rights to claim priority, reciprocity, or national treatment in the United States or any other country based on the foregoing.

(o) Proprietary Information of Third Parties.

(i) No third party has claimed or, to the knowledge of the Company, has reason to claim that any Person currently or formerly employed by or affiliated with the Company has (i) violated or may be violating any of the terms or conditions of his or her employment, non-competition, non-disclosure, invention or similar agreement with such third party, (ii) disclosed or may be disclosing or utilized or may be utilizing any trade secret or proprietary information or documentation of such third party or (iii) interfered or may be interfering in the employment relationship between such third party and any of its present or former employees. No third party has requested information from the Company that suggests that such a claim might be contemplated. To the knowledge of the Company, no Person currently or formerly employed by or affiliated with the Company has (a) employed or proposes to employ any trade secret or any information or documentation proprietary to any former employer or (b) violated any confidential relationship which such Person may have had with any third party, in connection with the development, manufacture, license or sale of any product or proposed product or the development, license or sale of any service or proposed service of the Company, and the Company has no reason to believe there will be any such employment or violation. The Company is not making unlawful use of any confidential information or trade secrets of any current or former officers, employees, consultants or independent contractors of the Company. To the Company's knowledge, none of the execution or delivery of this Agreement, or the carrying on of the Business of the Company by any officer, director, employee, consultant or independent contractor of the Company, or the conduct or proposed conduct of the Business of the Company, will conflict with or result in a breach of the terms, conditions or provisions of or constitute a default under any non-competition, non-disclosure, inventions or similar agreement under which any such Person is obligated. At no time during the conception or reduction of any of the Company IP Rights was any developer, inventor or other contributor to such Company IP Rights operating under any grants from any governmental entity or agency or private source, performing research sponsored by any governmental entity or agency or private source or, to the knowledge of the Company, subject to any employment, invention assignment, non-disclosure or similar agreement or other obligation with any third party, in each case that could materially adversely affect the Company IP Rights or otherwise have a material adverse effect on the Company.

(ii) To the Company's knowledge, the Company's transmission, reproduction, use, display or modification (including framing, and linking web site content) or other practices do not infringe or violate any proprietary or other right of any other Person and, to the Company's knowledge, no claim relating to such infringement or violation is threatened or pending.

(iii) The Company and the Subsidiary own or have valid licenses to use, reproduce, modify, distribute and sublicense all copies of the operating and applications computer software programs and databases used by the Company and the Subsidiary (the "Software"), and neither the Company nor the Subsidiary has sold, licensed, leased or otherwise transferred or granted any interest or rights in or to any portion thereof. To the knowledge of the Company, none of the Software used by the Company or the Subsidiary, nor any use thereof, conflicts with, infringes upon or violates any intellectual property or other proprietary right of any other Person and, to the knowledge of the Company, no claim, suit, action or other proceeding with respect to any such infringement or violation is threatened or pending. The Company and the Subsidiary have taken the steps reasonably necessary to protect its right, title and interest in and to the Software, including, without limitation, the execution of appropriate confidentiality agreements.

(p) Transactions with Affiliates. Except as set forth in Schedule 5(p) hereto, there are no agreements, understandings or proposed transactions between the Company and any of its officers, directors, consultants or employees, or any affiliate or family members thereof. All of the agreements identified on Schedule 5(p) hereto were entered into by the Company in good faith and are on terms no less favorable to the Company than those that the Company

could have obtained from non-affiliates. To the Company's knowledge after reasonable inquiry, except as set forth in the Amended and Restated Investors' Rights Agreement (listed on Schedule 5(p)), there exist no agreements among shareholders of the Company to act in concert with respect to their voting or holding of Company securities.

(q) Financial Statements.

(i) The draft consolidated financial statements of the Company and the Subsidiary as of and for the year ended December 31, 2012, for which the audit has not yet been completed, and the unaudited consolidated financial statements of the Company and the Subsidiary as of and for the six months ended June 30, 2013 have been provided to Subscriber prior to Closing and fairly present the consolidated financial position of the Company and Subsidiary as at the dates thereof, and the related consolidated statements of income, retained earnings and changes in financial position for the fiscal periods ended on such dates fairly present the consolidated results of operations and changes in financial position of the Company and Subsidiary for the respective periods indicated. All such financial statements including the schedules and notes thereto, were prepared in accordance with U.S. generally accepted accounting principles ("GAAP") applied consistently throughout the periods involved. The books and accounts of the Company are correct in all material respects and fairly reflect all of the transactions, items of income and expense and all assets and liabilities of the Company.

(ii) The Company has established or is in the process of establishing a system of internal accounting controls sufficient to provide reasonable assurance that: (i) transactions are executed in accordance with management's general or specific authorizations; (ii) transactions are recorded as necessary to permit preparation of financial statements in conformity with GAAP and to maintain asset accountability; (iii) access to assets is permitted only in accordance with management's general or specific authorization; and (iv) the recorded accountability for assets is compared with the existing assets at reasonable intervals and appropriate action is taken with respect to any differences.

(r) Tax Matters. There are no federal, state, county or local taxes due and payable by the Company or the Subsidiary that have not been paid. The Company and the Subsidiary have duly filed all federal, state, county and local tax returns required to have been filed by them and there are in effect no waivers of applicable statutes of limitations with respect to taxes for any year.

(s) Employee Benefit Plans. All "employee benefit plans" (as defined in Section 3(3) of the Employee Retirement Income Security Act of 1974, as amended ("ERISA")) and all other employee benefits and all other employee benefit arrangements, policies or payroll practices, including, without limitation, any arrangement, policy or payroll practices providing severance pay, bonuses, commissions, profit-sharing, savings, incentive, change of control, parachute, stock purchase, stock options, insurance, deferred compensation, or other similar fringe or employee benefits covering former or current employees of the Company or the Subsidiary or under which the Company or the Subsidiary has any obligation or liability (each, a "Benefit Arrangement"), are and have been maintained and administered in all material respects in accordance with their express terms and with the requirements of applicable law. The Company's payment to current or former employees pursuant to the Benefit Arrangements are and have been fully deductible under the Code.

(t) Environmental Matters. The operations of the Company through the date hereof would not reasonably be expected to result, either individually or in the aggregate, in any material claim or proceeding alleging liability for (i) pollution or contamination of the air, surface water, groundwater or land; (ii) waste generation, handling, treatment, storage, disposal or transportation; or (iii) handling, treatment, storage, disposal or transportation of or exposure to any chemicals, materials or substances that are defined or regulated as dangerous, toxic, explosive, corrosive, flammable, infectious, radioactive, carcinogenic, mutagenic or otherwise hazardous or toxic or as a pollutant or contaminant under any applicable law ("Hazardous Materials"). To the Company's knowledge, (i) there are no underground storage tanks on any real property leased or otherwise utilized by the Company that are not properly registered or permitted under applicable laws or that at any time have released, leaked, disposed of or otherwise discharged Hazardous Materials and (ii) there are no asbestos containing materials or PCBs on any real property leased or otherwise utilized by the Company.

(u) Disclosure. The Company has provided Subscriber with all information requested by Subscriber in connection with Subscriber's decision to purchase the Note and the Warrant, including all information the Company reasonably believes is necessary to make such investment decision. To the best of Company's knowledge and belief, neither this Agreement, the Schedules and Exhibits hereto, nor any other document or certificate delivered by the Company to Subscriber or their attorneys or agents in connection herewith or therewith or with the transactions contemplated hereby or thereby, contain any untrue statement of a material fact or omit to state a material fact necessary in order to make the statements contained herein or therein, in light of the circumstances under which they were made, not misleading. To the best of Company's knowledge and belief, there is no fact which materially and adversely affects, or which in the future may (so far as the Company can reasonably foresee) materially and adversely affect, the business, properties, operations, condition (financial or otherwise), intellectual property rights, prospects or affairs of the Company (except for general economic conditions

which are beyond the control of the Company), which has not been expressly set forth in this Agreement or otherwise disclosed to Subscriber, including the Schedules and Exhibits hereto.

(v) Offering. Subject to the truth and accuracy of Subscriber's representations and warranties set forth in this Agreement, as of the date hereof, the offer, sale and issuance of the Securities to Subscriber as contemplated by this Agreement are exempt from the registration requirements of the Securities Act and do not require registration or qualification under any applicable state blue sky or securities laws. Neither the Company nor any agent on its behalf has solicited or shall solicit any offer to sell or has offered to sell or shall offer to sell all or any part of the Securities to any Person so as to bring the sale of such Securities by the Company within the registration provisions of the Securities Act or any state securities laws.

6. Covenants.

(a) Subordination of Existing Notes to Subscriber's Note. The Company will obtain, not later than September 30, 2013, a subordination agreement from that Company shareholder currently holding Company promissory notes in the principal amount of approximately US$8.5 million (the "Existing Notes"), confirming that the Note issued to Subscriber under this Agreement will be senior with respect to priority and payment to the Existing Notes in substantially the form attached hereto as Exhibit C (the "Subordination of Existing Notes Agreement").

(b) Senior Indebtedness; Subordination of Subscriber's Note to Senior Indebtedness(i). To the extent that the Company determines in its good faith discretion that the timing of receipt of the amounts Subscriber advances to the Company pursuant to the Notes issued to Subscriber under this Agreement are insufficient to meet the Company's capital needs, or such advances are otherwise untimely or delayed by Subscriber, the following shall apply:

(i) Senior Indebtedness. The Company shall be entitled to incur indebtedness for money borrowed by the Company (whether or not secured) from one or more banks, commercial finance lenders, equipment lenders, insurance companies, financial institutions or other qualified investors (together with the Lewis Note, the "Senior Indebtedness"), and any such indebtedness or any debentures, notes, or other evidence of indebtedness issued in exchange for or to refinance such Senior Indebtedness, or any indebtedness arising from the satisfaction of such Senior Indebtedness by a guarantor. At or before the Closing, Subscriber shall execute a subordination agreement in substantially the form attached hereto as Exhibit D (the "Subordination of Mahyco Note Agreement") confirming that the Note issued to Subscriber under this Agreement will be junior with respect to priority and payment to the Senior Indebtedness, except with respect to the Subscriber Settlement Right (as defined below), which shall be senior to the Senior Indebtedness.

(ii) Subscriber Settlement Right. The "Subscriber Settlement Right" means Subscriber's right from time to time to demand immediate settlement of a portion of the outstanding balance of the Note (including outstanding unpaid interest), the amount of which will be agreed upon by the Company and Subscriber prior to such settlement ("Settlement Amount"). In order to exercise the Subscriber Settlement Right, Subscriber must first provide written notice to the Company for payment under the Settlement Right, which notice shall set

forth the Settlement Amount required to be paid by the Company to the Subscriber under the Note (the "Subscriber Notice"). Within thirty (30) days of receipt by the Company of the Subscriber Notice, the Company shall pay the Settlement Amount to Subscriber as settlement of a portion of the Note.

(c) Company Right to Prepay Note. The Company has the right to make accelerated repayment of the Note (including interest) in full or in part, by giving at least ninety (90) days' notice to Subscriber. Subscriber may, at its option, on or prior the expiration of such 90-day notice period, elect to exercise its right to convert all or part of the outstanding balance of the Note (including outstanding unpaid interest) into Common Stock as described in Section 6(d) below.

(d) Subscriber's Right to Convert Note. At any time and from time to time prior to maturity and the pre-payment of the Note in accordance with Section 6(c) above, Subscriber has the right to convert all or any part of the outstanding balance of the Note (including outstanding unpaid interest), into that number of shares of Common Stock of the Company determined by dividing the outstanding balance of the Note (including outstanding unpaid interest) being converted by US$4.13 (the "Conversion Rate"), and the Company shall duly comply.

(e) Subscriber's Right to Provide Further Financing. The parties hereby agree that, during the 5-year period following the Closing, notwithstanding anything to the contrary contained in this Agreement, Subscriber shall have the right, in its discretion, to extend an additional convertible loan in amount(s) not exceeding US$5,000,000 (in such tranches as Subscriber deems appropriate) to the Company, on the same terms as the initial Note issued pursuant to this Agreement, except that:

(i) Such additional loan shall not have any warrant coverage;

(ii) Such additional loan will be:

(A) Expressly subordinated in right of priority and payment to the priority and payment of all Company indebtedness existing at the time such additional loan is funded to the same extent that the Existing Notes are subordinated in right of priority and payment to the Note issued to Subscriber pursuant to this Agreement, and Subscriber agrees to execute and deliver to the lender of any such Company indebtedness a subordination agreement in substantially the form of the Subordination of Mahyco Note Agreement, except that such additional loan shall be junior to such Company indebtedness; and

(B) Senior (to the same extent that the Note issued to Subscriber pursuant to this Agreement is senior to the Existing Notes) to all Company indebtedness incurred by the Company after such additional loan is funded.

(iii) The parties hereby agree that the Conversion Rate for such additional loan shall be:

(A) If Subscriber exercises this right during the first 3 years of the 5-year period following the Closing, the Conversion Rate set forth in Section 6(d) above; and

(B) If Subscriber exercises this right during the last 2 years of the 5-year period following the Closing, instead of the Conversion Rate set forth in Section 6(d) above, Subscriber shall have the right to convert all or any part of the outstanding balance of such additional loan (including outstanding unpaid interest), into Common Stock at a conversion price per share equal to 90% of the purchase price per Common Stock equivalent issued in the then-most recent, arms'-length equity funding transaction of at least US$1,000,000 consummated by the Company (excluding issuance(s) of convertible debt).

(f) Confidentiality. Subscriber agrees to keep confidential the existence and the terms and conditions of this Agreement and any information Subscriber receives from the Company pursuant to this Agreement other than information that (i) has been voluntarily disclosed to the general public by the Company or its affiliates, (ii) has been independently developed and disclosed to the general public by others through lawful means, or (iii) otherwise enters the public domain through lawful means; provided, however, Subscriber may disclose such information (A) to its attorneys, accountants and other professionals and representatives to the extent necessary or appropriate in connection with its investment in the Company, (B) to any affiliate of Subscriber (including, without limitation, partners, members and directors), so long as such affiliate agrees to be bound by the provisions of this Section 6(f), and (C) subject to prior consent of the Company, to any other holder of Company securities or any other person or entity.

(g) Further Assurances. Subsequent to the Closing, each party shall take such further action as the other party reasonably requests to effect the provisions of this Agreement.

(h) Adjustment to Conversion Shares. In case the Company takes any of the following actions while the Note and the Warrant remain outstanding, the number and kind of Conversion Shares and Warrant Shares (as the case may be) will be subject to adjustment as follows:

(i) Dividends. In the event the Company shall make or issue, or shall fix a record date for the determination of holders of Common Stock entitled to receive a dividend or other distribution with respect to the Common Stock payable in securities of the Company or other assets (excluding cash dividends or distributions), then and in each such event provision shall be made so that, upon conversion of the Warrant and/or amount then outstanding under the Note, Subscriber shall receive, in addition to the number of shares of Common Stock receivable upon conversion thereof, the number of securities or such other assets of the Company which Subscriber would have received had such Warrant and/or amount (as the case may be) been converted into Common Stock immediately prior to the consummation of such event and had Subscriber thereafter, during the period from the date of such event to and including Subscriber's conversion of the Warrant and/or Note, retained such securities or such other assets receivable by them during such period, subject to further adjustment as provided in this Section 6(h).

(ii) Capital Reorganization or Reclassification. If the Common Stock issuable upon the conversion of the Warrant and/or Note shall be changed into the same or different number of shares of any class or classes of capital stock, whether by capital reorganization, recapitalization, reclassification or otherwise (other than a subdivision or combination of shares or stock dividend provided for in Section 6(h)(i)), or a merger, consolidation or sale of all or substantially all of the Company's capital stock or assets to any

other person), then and in each such event Subscriber shall have the right thereafter to convert the Warrant and/or the then outstanding amount under the Note (or portion thereof) into the kind and amount of shares of capital stock and other securities and property receivable upon such reorganization, recapitalization, reclassification or other change which Subscriber would have received if such amount had been converted into Common Stock immediately prior to the consummation of such reorganization, recapitalization, reclassification or change, subject to further adjustment as provided in this Section 6(h).

(iii) Certificate as to Adjustments; Notice by Company. In each case of an adjustment or readjustment of the Conversion Shares and/or Warrant Shares (as the case may be), the Company at its expense will furnish Subscriber with a certificate prepared by the Treasurer or Chief Financial Officer of the Company, showing such adjustment or readjustment, and stating in detail the facts upon which such adjustment or readjustment is based.

(iv) No Issuance of Fractional Conversion Share. No fraction of a Conversion Share and/or Warrant Share (as the case may be) or scrip representing a fraction of a Conversion Share and/or Warrant Share (as the case may be) shall be issued upon conversion of the Note and/or Warrant (as the case may be). Instead, any fraction of a Conversion Share and/or Warrant Share (as the case may be) that would otherwise be issuable upon conversion of the Note and/or Warrant (as the case may be) shall be rounded up to the next whole Conversion Share and/or Warrant Share (as the case may be) issuable upon the conversion of the Note and/or Warrant (as the case may be). With respect only to Conversion Shares, the determination as to whether any fraction shall be rounded up shall be made with respect to the aggregate principal and interest balance of the Note being converted at any one time.

(v) Partial Conversion. In the event some but not all of the outstanding balance of the Note and/or Warrant (as the case may be) is converted, the Company shall execute and deliver to Subscriber, at the expense of the Company, a new Warrant representing the number of Warrant Shares outstanding and/or a new Note representing the principal and interest balance of the Note that was not converted (as the case may be).

(vi) Reservation of Common Stock. The Company shall at all times reserve and keep available out of its authorized but unissued shares of capital stock, solely for the purpose of effecting the conversion of the Warrant and the Note, such number of its shares of capital stock as shall from time to time be sufficient to effect the conversion of all the amount then outstanding under the Warrant and the Note, and if at any time the number of authorized but unissued shares of capital stock shall not be sufficient to effect the conversion of the Warrant and the amount then outstanding under the Note in their entirety, the Company shall take such action as may be necessary to increase its authorized but unissued shares of capital stock to such number of shares of capital stock as shall be sufficient for such purpose.

7. Information Rights. As long as Subscriber continues to own the Note, the Warrant, any Conversion Shares or any Warrant Shares, Subscriber shall be entitled to receive, and the Company shall provide to Subscriber, at the times specified, the following:

(a) as soon as practicable, but in any event within ninety (90) days of the end of each of the first three quarters of the fiscal year, an unaudited consolidated profit or loss statement of the Company such fiscal quarter;

(b) as soon as practicable, but in any event within ninety (90) days of the end of each fiscal year, a consolidated balance sheet of the Company as of the end of each fiscal year and the related consolidated statements of income, shareholders' equity, and cash flows for each fiscal year, prepared in accordance with GAAP and, if audited, accompanied by the audit report of the Company's independent public accountants;

(c) promptly upon sending, making available, or mailing the same, all press releases, reports, and financial statements that the Company sends or makes available generally to its shareholders;

(d) promptly after the commencement thereof, notice of all actions suits, claims, proceedings, investigations, and inquiries that are likely to materially and adversely affect the Company;

(e) promptly after receipt thereof, notice of all "Events of Default" under any material financial obligation to which the Company or any wholly-owned subsidiary is a party, including all Senior Indebtedness;

(f) promptly after Board approval thereof, copies of all amendments to the Company's Charter Documents; and

(g) promptly, from time to time, such other material information regarding the business, financial condition, operations, property or affairs of the Company as Subscriber may reasonably request.

8. Miscellaneous.

(a) Notice. Any notice or other communication required or permitted to be given hereunder shall be in writing and shall be mailed by certified mail, return receipt requested, or by Federal Express or similar overnight delivery or courier service or delivered by facsimile or e-mail transmission to whom it is to be given, if to the Company, at the address set forth on the first page hereof, if to Subscriber, at the address set forth on the signature page hereof, or

in either case, to such other address, facsimile number, or e-mail address as the party shall have furnished in writing in accordance with the provisions of this Section 8(a). Notice to the estate of any party shall be sufficient if addressed to the party as provided in this Section 8(a). Any notice or other communication given by certified mail shall be deemed given at the time of certification thereof, except for a notice changing a party address which shall be deemed given at the time of receipt thereof. Any notice given by other means permitted by this Section 8(a) shall be deemed given at the time of receipt thereof.

(b) Binding Agreement. This Agreement shall be binding upon and inure to the benefit of the parties hereto, the successors and assigns of the Company, and the permitted successors, assigns, heirs and personal representatives of Subscriber. Absent the prior written consent of the Company, Subscriber may not assign this Agreement, the Note or the Warrant to any person or entity other than to affiliates of Subscriber (including, without limitation, partners, members and directors).

(c) Headings. The headings in this Agreement are solely for convenience of reference and shall be given no effect in the construction or interpretation of this Agreement.

(d) Choice of Law. This Agreement shall be governed by, and construed in accordance with, the laws of the State of Arizona, irrespective of any conflict of laws provision thereof.

(e) Counterparts. This Agreement may be executed in any number of counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument.

(f) Entire Agreement; Amendment, Modification or Waiver. This Agreement represents the entire agreement of the parties with respect to the subject matter hereof, and all agreements entered into prior hereto are revoked and superseded by this Agreement, and no representations, warranties, inducements or oral agreements have been made by any of the parties except as expressly set forth herein and therein. The terms of this Agreement may be amended, modified or waived only upon the written consent of the Company and Subscriber, and any amendment effected in accordance with this Section 8(f) shall be binding on the Company and Subscriber, and its successors and assigns.

(g) Expenses. The Company and Subscriber shall each bear their own expenses incurred on their own behalf with respect to this Agreement and the transactions contemplated hereby.

(h) Arbitration. If the parties should have a dispute arising out of or relating to the Transaction Documents, or the parties' respective rights and duties thereunder, then the parties will resolve such dispute in the following manner: (i) either party may at any time deliver to the other a written dispute notice setting forth a brief description of the issue(s) for which such notice initiates the dispute resolution mechanism contemplated by this Section 8(h); (ii) during the thirty (30) day period following the delivery of the notice described in Section 8(h), appropriate representatives of the various parties will meet and seek to resolve the disputed issue(s) through negotiation, (iii) if representatives of the parties are unable to resolve the disputed issue(s) through negotiation, then within fifteen (15) days after the period described in Section 8(h), either party may file an arbitration demand with the American Arbitration Association ("AAA") for final and binding arbitration (to the exclusion of a court of law) in Arizona in accordance with the then existing Commercial Arbitration Rules (the "Rules") of the AAA, and judgment upon the award rendered by the arbitrators may be entered in any court having jurisdiction thereof; provided, however, that the law applicable to any controversy shall be as set forth in Section 8(d). In any arbitration pursuant to this Agreement, the award or decision shall be rendered by a panel of three arbitrators (unless the Company and Subscriber

mutually agree to a single arbitrator, in which case there shall be a single arbitrator) who shall be appointed by mutual agreement of the Company and Subscriber. In the event of the failure of the Company and Subscriber to agree within forty-five (45) days after the commencement of the arbitration proceeding upon the appointment of panel of arbitrators (three or one), the panel shall be appointed in accordance with the Rules. Upon the completion of the selection of the panel, an award or decision shall be rendered as soon as practicable. Notwithstanding the foregoing, the request by either party for preliminary or permanent injunctive relief, whether prohibitive or mandatory, shall not be subject to arbitration and may be adjudicated only by the U.S. District Court for the District of Arizona.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of September 27, 2013.

THE COMPANY:

ARCADIA BIOSCIENCES, INC., an Arizona corporation

By: /s/ Eric J. Rey
Name: Eric J. Rey
Title: President & CEO
Address: 4222 E Thomas Rd, Suite 245
Phoenix, AZ 85018

Facsimile: (530) 756-7027
E-mail: eric.rey@arcadiabio.com

SUBSCRIBER:

MAHYCO INTERNATIONAL PTE LTD.

By: /s/
Name:
Title:
Address:

Facsimile:
E-mail:

[Signature Page to Note and Warrant Purchase Agreement]

Schedules:

A Schedule of Exceptions
- Schedule 1(b) — Arcadia Wire Transfer Information
- Schedule 5(d) — Subsidiaries
- Schedule 5(j) — Dividends and Distributions; Indebtedness; Material Agreements
- Schedule 5(p) — Transactions with Affiliates

Exhibits:

A Form of Convertible Promissory Note
B Form of Stock Purchase Warrant
C Form of Subordination of Existing Notes Agreement
D Form of Subordination of Mahyco Note Agreement

SCHEDULE A

SCHEDULE OF EXCEPTIONS

These Schedules are being delivered pursuant to the Note and Warrant Purchase Agreement, dated September , 2013 (the "Agreement") by and between Arcadia Biosciences, Inc. (the "Company"), and Mahyco International Pte Ltd. ("Mahyco"). Capitalized terms used but not defined herein shall have the respective meanings assigned to such terms in the Agreement, unless the context otherwise requires.

The representations and warranties of the Company set forth in Section 5 of the Agreement are made and given subject to these Schedules and are qualified in their entirety hereby. The representations and warranties made by the Company in the Agreement are exclusive and the Company makes no representations or warranties whatsoever except as set forth in the Agreement. These Schedules should be read in their entirety.

In addition, these Schedules are subject to the following terms and conditions:

1. All references to Section numbers are to Sections of the Agreement, unless otherwise stated or the context otherwise requires.

2. The headings and descriptions of representations, warranties, and covenants herein are for descriptive purposes and convenience of reference only and should not be deemed to affect such representations, warranties, or covenants or to limit the exceptions made hereby or the provisions hereof.

SCHEDULE 1(b)

Arcadia Biosciences Wire Transfer Instructions

Wells Fargo Bank, NA.
8601 N. Scottsdale Road, Suite 150
Scottsdale, AZ 85253

Account Title: Arcadia Biosciences, Inc.
SWIFT CODE: [...*...]
Account Number: [...*...]
Account Type: Savings
FIN: [...*...]

Bank Contact Name: Jaimee Pascale
Bank Contact Number: (480) 348-4397
Email: jaimee.l.pascale@wellsfargo.com

SCHEDULE 5(d)

Subsidiaries

Entity	Legal Relationship	Comments
Limagrain Cereal Seeds, LLC	Joint venture with Limagrain USA, Inc., a wholly-owned subsidiary of Vilmorin & Cie	Minority ownership interest
Verdeca LLC	Joint venture with Bioceres, Inc., a wholly-owned subsidiary of Bioceres S.A.	50% ownership interest
Bioceres S.A.	Shareholder	Arcadia owns 632 shares of Bioceres S.A. common stock

---

SCHEDULE 5(j)

Dividends and Distributions; Indebtedness; Material Agreements

Entity	Title	Date	Description
Farnam Street Financial, Inc.	Equipment Lease	4/1/2013; amended 7/1/2013	Lease for laboratory equipment; 18 month term (from 7/1/2013); total payments US$125,000

SCHEDULE 5(p)

Transactions with Affiliates

Entity	Title	Date	Description
Blue Horse Labs, Inc.	Sponsored Research & Development Agreement	1/1/2003	Agreement under which BHL provided funding for certain research activities
Blue Horse Labs, Inc.	Intellectual Property License	1/1/2003; amended 8/1/2009	Exclusive license of certain patent assets wholly developed with BHL funding from Sponsored R&D Agreement
Moral Compass Corporation	Agreement for the Purchase and Sale of Stock	2/26/2010	Purchase of 642,857 shares of Company common stock
Moral Compass Corporation	Series A Preferred Stock Purchase Agreements	1/15/2007; 6/29/2007; 4/9/2008; 7/24/2008	Purchase of 60,681,806 shares of Company Series A Preferred stock
Moral Compass Corporation	Series B Preferred Stock Purchase Agreement	6/30/2009	Purchase of 15,391,005 shares of Company Series B Preferred stock
Moral Compass Corporation	Series C Preferred Stock Purchase Agreement	10/14/2009	Commitment to Purchase 9,345,794 shares of Company Series C Preferred stock
Moral Compass Corporation	Amended and Restated Investors' Rights Agreement	4/30/2010	Investors' Rights Agreement
Moral Compass Corporation	Loan Agreement	7/23/2012	US$8,000,000 loan; 3 year term
Moral Compass Corporation	Short-Term Loan Agreement	7/18/2013	US$500,000 loan; 3 month term
Verdeca LLC	Technology Licenses	2/28/2012	Contractual commitment to grant certain technology licenses to Verdeca LLC for utilization in soybeans; reciprocal commitment from joint venture partner

Note: Agreements with Moral Compass Corporation having effective dates prior to July 23, 2012 were executed under prior legal names of Moral Compass Corporation, *i.e.*, Moral Hazard Corporation and Exeter, Inc.

EXHIBIT A

[Form of Convertible Promissory Filed as Exhibit 4.5]

EXHIBIT B

[Form of Stock Purchase Warrant attached]

THE SECURITIES REPRESENTED BY THIS WARRANT HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933 (THE **"ACT"**) OR UNDER THE SECURITIES LAWS OF ANY STATE. THESE SECURITIES MAY NOT BE OFFERED FOR SALE, SOLD, OR OTHERWISE TRANSFERRED, EXCEPT PURSUANT TO AN EFFECTIVE REGISTRATION STATEMENT FILED UNDER THE SECURITIES ACT OF 1933 OR PURSUANT TO AN EXEMPTION FROM THE REGISTRATION REQUIREMENTS OF SUCH ACT, THE AVAILABILITY OF WHICH EXEMPTION MUST BE ESTABLISHED TO THE REASONABLE SATISFACTION OF THE COMPANY. THE TRANSFER OF THIS INSTRUMENT IS RESTRICTED AS DESCRIBED HEREIN.

Issue Date: September , 2013

STOCK PURCHASE WARRANT
ARCADIA BIOSCIENCES, INC.

This Warrant is issued, for value received, to Mahyco International Pte Ltd., a company formed under the laws of Singapore (**"Holder"**), by Arcadia Biosciences, Inc., an Arizona corporation (**"Company"**), pursuant to that certain Note and Warrant Purchase Agreement between Company and Holder dated September , 2013 (the **"Purchase Agreement"**). Capitalized terms not defined herein shall have the meanings ascribed to such terms in the Purchase Agreement.

l. Purchase of Shares. Subject to the terms and conditions as hereinafter set forth, the Holder of this Warrant is entitled, upon surrender of this Warrant to the Company, to purchase from the Company up to 302,665 shares of the Company's Common Stock (the **"Exercise Stock"**).

2. Exercise Period. The purchase price for each share of Exercise Stock subject to this Warrant will be equal to US$4.13 per share (the **"Exercise Price"**).

3. Exercise Period. This Warrant shall immediately vest on the Issue Date stated above and remain exercisable until and including the fifth anniversary of the Issue Date.

4. Method of Exercise: Expenses.

(a) While this Warrant remains outstanding and exercisable in accordance with Section 3 above, the Holder may exercise, in whole or in part, and from time to time, the purchase rights evidenced hereby. Such exercise will be effected by:

(i) the surrender of this Warrant, together with a duly executed copy of the form of subscription attached hereto, to the Secretary of the Company at its principal offices; and

(ii) the payment to the Company in cash or check of an amount equal to the aggregate Exercise Price for the number of shares of Exercise Stock being purchased.

(b) The Company will pay all expenses, taxes (other than transfer taxes) and other charges payable in connection with the preparation, issuance and delivery of this Warrant and the Exercise Stock.

(c) Each exercise of this Warrant will be deemed to have been effected immediately prior to the close of business on the day on which this Warrant will have been surrendered to the Company as provided in Section 4(a) above. At such time, the person or persons in whose name or names any certificates for the shares of Exercise Stock will be issuable upon such exercise will be deemed to have become the Holder or holders of record of the Exercise Stock represented by such certificates.

(d) If this Warrant is exercised in part only, the Company shall, if this Warrant is surrendered for cancellation, execute and deliver a new Warrant of the same tenor evidencing the right of the Holder to purchase the balance of the Exercise Stock hereunder upon the same terms and conditions as herein set forth.

5. Certificates for Shares. Upon the exercise of the purchase rights evidenced by this Warrant, one or more certificates for the number of shares of Exercise Stock so purchased will be issued as soon as practicable thereafter, and in any event within 10 business days of the delivery of the subscription notice.

6. Valid Issuance of Shares. The Company covenants that: (i) it will at all times keep reserved for issuance upon exercise hereof such number of shares of Exercise Stock as will be issuable upon such exercise, and (ii) the shares of Exercise Stock, when issued pursuant to the exercise of this Warrant, will be duly and validly issued, fully paid and nonassessable and free from all taxes, liens, charges and preemptive or similar rights with respect to the issuance thereof.

7. Adjustment of Exercise Price and Type and Number of Shares.

(a) The Exercise Price and the number and kind of shares of Exercise Stock (or other securities) purchasable hereunder will be subject to adjustment as follows: In case the Company will at any time prior to the expiration of this Warrant, (i) pay a dividend or make a distribution on the outstanding shares of Exercise Stock, (ii) subdivide the outstanding shares of Exercise Stock into a larger number of shares of Exercise Stock, (iii) combine the outstanding shares of Exercise Stock into a smaller number of shares of Exercise Stock, or (iv) issue any equity interest in a reclassification of Exercise Stock, then, and in each such case, the Exercise Price and number of shares of Exercise Stock (or other securities) purchasable hereunder in effect immediately prior to such event will be adjusted (and any other appropriate actions will be taken by the Company) so that the Holder of this Warrant will be entitled to receive, for the same aggregate consideration, the number of shares of Exercise Stock or other securities of the Company that the Holder would have owned or been entitled to receive upon or by reason of any of the events described above, had this Warrant been exercised immediately prior to the occurrence of such event with respect to any unexercised portion of this Warrant. Any adjustment made pursuant to this Section 7(a) will become effective (x) in the case of any such dividend or distribution, on the date immediately following the close of business on the record date for the determination of Holders of Exercise Stock entitled to receive such dividend or

distribution or (y) in the case of any such subdivision, combination or reclassification, on the close of business on the day upon which such corporate action becomes effective.

(b) If after the date hereof the Company shall enter into any Reorganization (as hereinafter defined), then, as a condition of such Reorganization, lawful provisions shall be made, and duly executed documents evidencing the same from the Company or its successor shall be delivered to the Holder, so that the Holder shall thereafter have the right to exercise this Warrant as provided in Section 1 prior to the consummation of such Reorganization, and shall receive, in lieu of the Exercise Stock (or other securities) issuable upon such an exercise prior to such consummation or such effective date, the stock and other securities and property (including cash) to which the Holder is entitled upon the consummation of such Reorganization. The Company shall notify the Holder of its plan to enter into any Reorganization at least thirty (30) days prior to the consummation of such Reorganization and shall make the aforesaid lawful provisions and deliver the aforesaid duly executed documents as soon as possible after providing such notice, but in any event prior to the consummation of such

Reorganization. If the Holder elects not to exercise this Warrant prior to consummation of such Reorganization, this Warrant will terminate in its entirety on consummation of such Reorganization. For the purposes of this Section 7(b), the term **"Reorganization"** shall include without limitation any reclassification, capital reorganization, conversion or change of the Exercise Stock (other than as a result of a subdivision, combination or stock dividend provided for in Section 7(a) hereof), or any consolidation of the Company with, or merger of the Company into, another corporation or other business organization (other than a merger in which the Company is the surviving corporation and which does not result in any reclassification or change of the outstanding Exercise Stock), or any sale or conveyance to another corporation or other business organization of all or substantially all of the assets of the Company.

(c) When any adjustment is required to be made in the number or kind of shares purchasable upon exercise of the Warrant, or in the Exercise Price, the Company will promptly notify the Holder of this Warrant of such event and of the number of shares of Exercise Stock or other securities or property thereafter purchasable upon exercise of this Warrant.

8. No Fractional Shares or Scrip. No fractional shares or scrip representing fractional shares will be issued upon the exercise of this Warrant, but in lieu of such fractional shares the Company will make a cash payment therefor on the basis of the Exercise Price then in effect.

9. No Stockholder Rights. Prior to exercise of this Warrant, the Holder will not be entitled to any rights of a stockholder with respect to the shares of Exercise Stock, including (without limitation) the right to vote such shares, receive dividends or other distributions thereon, or be notified of stockholder meetings.

10. Transferability. Subject to compliance with applicable federal and state securities laws in the United States, Singapore and any other jurisdiction applicable to Holder, including without limitation the restrictions set forth in Section 4 of the Purchase Agreement, this Warrant and all rights hereunder are transferable in whole or in part by the Holder of this Warrant to any affiliate of the Holder (including, without limitation, partners, members and directors) upon written notice to the Company. Absent the prior written consent of the Company, Holder may

not assign this Warrant to any other person or entity. In the event of a partial transfer, the Company will issue to Holder and the permitted transferee one or more appropriate new warrants.

11. Successors and Assigns. The terms and provisions of this Warrant will inure to the benefit of, and be binding upon, the Company and the Holders hereof and their respective successors and permitted assigns.

12. Amendments and Waivers. Any waiver or amendment of any term of this Warrant must be in writing signed by the Holder and by the Company and will be binding upon any subsequent holder of this Warrant.

13. Notices. All notices, requests, consents and other communications hereunder will be in writing, will be addressed to the receiving party's address as set forth on the books of the Company or to such other address as a party may designate by notice hereunder, and will be either (i) delivered by hand, (ii) sent by reputable overnight courier, or (iii) sent by registered or certified mail, return receipt requested, postage prepaid. All notices, requests, consents, and other communications hereunder will be deemed to have been given either (x) if by hand, at the time of the delivery thereof to the receiving party at the address of such party set forth above, (y) if sent by overnight courier, on the next business day following the day such notice is delivered to the courier service, or (z) if sent by registered or certified mail, on the 5th business day following the day such mailing is made.

14. Governing Law. This Warrant will be governed by the laws of the State of Arizona (without giving effect to the conflict of law principles thereof).

THE COMPANY:

Arcadia Biosciences, Inc., an Arizona corporation

By: _____
Name: Eric J. Rey
Title: President & CEO
Address: 4222 E Thomas Rd, Suite 245
Phoenix, AZ 85018

SUBSCRIPTION

Arcadia Biosciences, Inc., an Arizona corporation
Attention: Corporate Secretary

The undersigned, the Holder of the attached Warrant, hereby irrevocably elects to purchase, pursuant to the provisions of the attached Warrant, shares of Exercise Stock of Arcadia Biosciences, Inc., an Arizona corporation

Payment of the exercise price per share required under such Woman accompanies this Subscription.

WARRANT HOLDER:

Name of Holder: _____

By: _____

Print Name: _____
Print Title _____
Date: _____

EXHIBIT C

[Form of Subordination of Existing Notes Agreement attached]

SUBORDINATION AGREEMENT

This Subordination Agreement ("Agreement") dated as of September , 2013 ("Effective-Date"), is made by Moral Compass Corporation, an Arizona corporation with its principal place of business at 4835 E. Exeter Blvd., Phoenix, AZ 85018, and/or its affiliates and subsidiaries ("Subordinated Creditor"), for the benefit of Mahyco International Pte Ltd., a company formed under the laws of Singapore ("Mahyco") and the William C. Lewis Trust dated August 1, 1989, William C. Lewis trustee residing at 6525 N. 26th Street, Phoenix, AZ 85016 ("Lewis"). Each of Mahyco and Lewis are referred to herein as "Lender" and, collectively, as "Lenders").

Subordinated Creditor currently holds unsecured promissory notes issued to it by Arcadia Biosciences, Inc., an Arizona corporation ("Borrower") in the principal amount of US$8.5 million, plus interest ("Existing Notes").

Mahyco currently holds or intends to hold unsecured promissory notes evidencing Borrower indebtedness in the aggregate principal amount of up to US$5 million, whether such indebtedness now exists or is hereafter created or incurred, and whether it is or may be direct or indirect, due or to become due, absolute or contingent primary or secondary, liquidated or unliquidated, or joint, several or joint and several, all interest thereon, all renewals, extensions and modifications thereof and any notes issued in whole or partial substitution therefor ("Mahyco Notes").

Lewis currently holds or intends to hold an unsecured promissory note evidencing Borrower indebtedness in the aggregate principal amount of up to US$2 million, whether such indebtedness now exists or is hereafter created or incurred, and whether it is or may be direct or indirect, due or to become due, absolute or contingent, primary or secondary, liquidated or unliquidated, or joint, several or joint and several, all interest thereon, all renewals, extensions and modifications thereof and any notes issued in whole or partial substitution therefor ("investor Note" and, collectively with Mahyco Notes, the "Senior Debt").

As a condition to making any loan or extension of credit to Borrower, Lenders have required that the Subordinated Creditor subordinate the payment of Existing Notes and other financial accommodations relating thereto to the payment of Senior Debt in accordance with the terms hereof.

ACCORDINGLY, in consideration of the Senior Debt and other financial accommodations relating thereto made by Lender for the benefit of Borrower, and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, Subordinated Creditor hereby agrees as follows:

l. Definitions. As used herein, the following terms have the meanings set forth below:

"Borrower Default" means a Default or Event of Default as defined in any agreement or instrument evidencing, governing, or issued in connection with Senior Debt.

"Subordinated Indebtedness" means all obligations arising under Existing Notes and each and every other debt, liability and obligation of every type and description that Borrower may now or at any time hereafter owe to Subordinated Creditor in connection with the Existing Notes, whether such debt, liability or obligation now exists or is hereafter created or incurred, and whether it is or may be direct or indirect, due or to become due, absolute or contingent, primary or secondary, liquidated or unliquidated, or joint, several or joint and several, all interest thereon, all renewals, extensions and modifications thereof and any notes issued in whole or partial substitution therefor.

2. Subordination. The payment of all Subordinated Indebtedness is hereby expressly subordinated to the extent and in the manner hereafter set forth to the payment in full of Senior Debt.

3. No Principal Payments on Subordinated Indebtedness while Blocking Notice is in Effect. Unless Senior Debt has previously been paid in full, during the period that a Blocking Notice (as defined below) is in effect, Subordinated Creditor shall not demand, receive or accept any payment from Borrower in respect of Subordinated Indebtedness, or exercise any right of or permit any setoff in respect of Subordinated Indebtedness, other than payment of interest, without the prior written consent of the Lender(s) issuing the Blocking Notice. A "Blocking Notice" is a written notice from one or more Lenders to Subordinated Creditor in accordance with paragraph 9 below that a Borrower Default has occurred and is continuing with respect to the Senior Debt. From and after the delivery of a Blocking Notice, Subordinated Creditor is prohibited from demanding, receiving or accepting payment of principal in respect of Subordinated Indebtedness unless and until such Borrower Default is waived in writing by the Lender(s) issuing the Blocking Notice or cured by Borrower. Nothing contained herein shall prevent the Subordinated Creditor from accelerating any Subordinated Indebtedness or receiving or accepting payments in respect of the Subordinated Indebtedness when a Blocking Notice is not in effect.

4. Receipt of Prohibited Payments. If Subordinated Creditor receives any payment on Subordinated Indebtedness that Subordinated Creditor is not entitled to receive under the provisions of this Agreement, Subordinated Creditor will hold the amount so received in trust for Lenders and will forthwith turn over such payment to Lenders in the form received (except for the endorsement of Subordinated Creditor where necessary) for application to then-existing Senior Debt in such manner as Lenders may deem appropriate in compliance with any written subordination agreement by, between or among the Lenders. If Subordinated Creditor exercises any right of setoff that Subordinated Creditor is not permitted to exercise under the provisions of this Agreement, Subordinated Creditor will promptly pay over to Lenders, in immediately available funds, an amount equal to the amount of the claims or obligations offset for application to then-existing Senior Debt in such manner as Lenders may deem appropriate in compliance with any written subordination agreement by, between or among the Lenders. If Subordinated Creditor fails to make any endorsement required under this Agreement, each Lender, through its officers, employees or agents,

is hereby irrevocably appointed as the attorney-in-fact (which appointment is coupled with an interest) for Subordinated Creditor to make such endorsement in Subordinated Creditor's name.

5. Bankruptcy and Insolvency. In the event of any receivership, insolvency, bankruptcy, assignment for the benefit of creditors, reorganization or arrangement with creditors, whether or not pursuant to bankruptcy law, the sale of all or substantially all of the assets of Borrower, dissolution, liquidation or any other marshalling of the assets or liabilities of Borrower, Subordinated Creditor will file all claims, proofs of claim or other instruments of similar character necessary to enforce the obligations of Borrower in respect of Subordinated Indebtedness and, unless and until Senior Debt has been paid in full, Subordinated Creditor will hold in trust for and will forthwith turn over to Lenders in the form received (except for the endorsement of Subordinated Creditor where necessary) any and all moneys, dividends or other assets received in any such proceedings on account of Subordinated Indebtedness for application to then-existing Senior Debt in such manner as Lenders may deem appropriate in compliance with any written subordination agreement by, between or among the Lenders. If Subordinated Creditor fails to make any endorsement required under this Agreement, each Lender, through its officers, employees or agents, is hereby irrevocably appointed as the attorney-in-fact (which appointment is coupled with an interest) for Subordinated Creditor to make such endorsement in Subordinated Creditor's name, with the power but not the duty to demand, sue for, collect and receive any and all such moneys, dividends or other assets and give acquittance therefor and to file any claim, proof of claim or other instrument of similar character; and Subordinated Creditor will execute and deliver to Lenders such other and further powers-of-attorney or instruments as Lenders may request in order to accomplish the foregoing.

6. Restrictive Legend: Transfer of Subordinated Indebtedness. Subordinated Creditor will cause the Existing Notes and all other notes, bonds, debentures or other instruments evidencing the Subordinated Indebtedness or any part thereof to contain a specific statement thereon to the effect that the indebtedness thereby evidenced is subject to the provisions of this Agreement, and Subordinated Creditor will mark its books conspicuously to evidence the subordination effected hereby. As of the date hereof, Subordinated Creditor is the lawful holder of Existing Notes and has not transferred any interest therein to any other person.

7. Term. This Agreement shall commence on the Effective Date and continue in full force and effect until the Senior Debt is paid in full.

8. No Commitment. None of the provisions of this Agreement shall be deemed or construed to constitute or imply any commitment or obligation on the part of any Lender to make any future loans or other extensions of credit or financial accommodations to Borrower.

9. Notice. All notices and communications hereunder shall be in writing and shall be (i) personally delivered, (ii) transmitted by certified mail, return receipt requested, postage prepaid, or (iii) transmitted by telecopy, in each case addressed to the party to whom notice is being given at the address of such party first set forth above, or at such other address as may hereafter be designated in writing by that party. All such notices or other communications shall be deemed to have been given on (i) the date received if delivered personally, (ii) three (3) business days after the date of posting if delivered by mail, or (iii) the next business day after the date sent by overnight courier.

10. Conflict in Agreement. If the subordination provisions of any instrument evidencing Subordinated Indebtedness conflict with the terms of this Agreement, the terms of this Agreement shall govern the relationship between Lenders and Subordinated Creditor.

11. No Waiver. No waiver shall be deemed to be made by any Lender of any of its rights hereunder unless the same shall be in writing signed on behalf such Lender, and each such waiver, if any, shall be a waiver only with respect to the specific matter or matters to which the waiver relates and shall in no way impair the rights of such Lender or the obligations of subordinated creditor to such Lender in any other respect at any time.

12. Binding Effect: Acceptance. This Agreement shall be binding upon Subordinated Creditor and its successors and assigns and shall inure to the benefit of each Lender and each Lender's successors and assigns. Notice of acceptance by each Lender of this Agreement or of reliance by each Lender upon this Agreement is hereby waived by Subordinated Creditor.

13. Miscellaneous. The paragraph headings herein are included for convenience of reference only and shall not constitute a part of this Agreement for any other purpose. This Agreement may be executed in any number of counterparts, each of which shall be an original, but all of which together shall constitute one instrument.

14. Governing Laws; Consent to Jurisdiction and Venue. This Agreement shall be governed by and construed in accordance with the substantive laws (other than conflict laws) of the State of Arizona. Each party consents to the personal jurisdiction of the state and federal courts located in the State of Arizona in connection with any controversy related to this Agreement, waives any argument that venue in any such forum is not convenient, and agrees that any litigation initiated by any of them in connection with this Agreement shall Use venued in either the Superior Court of Maricopa County, Arizona or the United States District Court, District of Arizona.

[Signature Page Follows]

IN WITNESS WHEREOF, Subordinated Creditor has executed this Agreement as of the Effective Date first above-written.

SUBORDINATED CREDITOR:

Moral Compass Corporation

By: _____
Print Name: _____
Print Title: _____

Acknowledgement by Borrower

The undersigned, being the Borrower referred to in the foregoing Agreement, hereby (i) acknowledges receipt of a copy thereof, (ii) agrees to all of the terms and provisions thereof, (iii) agrees to and with each of the Lenders that it shall make no payment on Subordinated Indebtedness that Subordinated Creditor would not be entitled to receive under the provisions of the Agreement, (iv) agrees that any such payment will constitute a default under the Senior Debt, and (v) agrees to mark its books conspicuously to evidence the subordination of Subordinated Indebtedness effected hereby.

Arcadia Biosciences, Inc.

By: _____
Print Name: Eric J. Rey
Print Title: President & CEO

EXHIBIT D

[Form of Subordination of Mahyco Note Agreement attached]

SUBORDINATION AGREEMENT

This Subordination Agreement ("Agreement") dated as of September , 2013 ("Effective Date"), is made by Mahyco International Pte Ltd., a company formed under the laws of Singapore, and/or its affiliates and subsidiaries ("Subordinated Creditor"), for the benefit of the William C. Lewis Trust dated August l, l989, William C. Lewis trustee residing at 6525 N. 26th Street, Phoenix, AZ 85016 ("Lewis").

Subordinated Creditor currently holds one or more unsecured promissory notes issued to it by Arcadia Biosciences, Inc., an Arizona corporation ("Borrower") in the principal amount of US$5 million, plus interest ("Mahyco Notes").

Lewis currently holds or intends to hold an unsecured promissory note evidencing Borrower indebtedness in the aggregate principal amount of up to US$2 million, whether such indebtedness now exists or is hereafter created or incurred, and whether it is or may be direct or indirect, due or to become due, absolute or contingent, primary or secondary, liquidated or unliquidated, or joint, several or joint and several, all interest thereon, all renewals, extensions and modifications thereof and any notes issued in whole or partial substitution therefor ("Senior Debt").

As a condition to making any loan or extension of credit to Borrower, Lewis has required that the Subordinated Creditor subordinate the payment of Mahyco Notes and other financial accommodations relating thereto to the payment of Senior Debt in accordance with the terms hereof.

ACCORDINGLY, in consideration of the Senior Debt and other financial accommodations relating thereto made by Lewis for the benefit of Borrower, and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, Subordinated Creditor hereby agrees as follows:

1. Definitions. As used herein, the following terms have the meanings set forth below:

"Borrower Default" means a Default or Event of Default as defined in any agreement or instrument evidencing, governing, or issued in connection with Senior Debt.

"Subordinated Indebtedness" means all obligations arising under Mahyco Notes and each and every other debt, liability and obligation of every type and description that Borrower may now or at any time hereafter owe to Subordinated Creditor in connection with the Mahyco Notes, whether such debt, liability or obligation now exists or is hereafter created or incurred, and whether it is or may be direct or indirect, due or to become due, absolute or contingent, primary or secondary, liquidated or unliquidated, or joint, several or joint and several, all interest thereon, all renewals, extensions and modifications thereof and any notes issued in whole or partial substitution therefor.

"Subordinated Creditor Settlement Right" means Subordinated Creditor's right from time to time to demand immediate settlement of that portion of the outstanding

balance of the Mahyco Notes (including outstanding unpaid interest) equal to the dollar amount accruing on or after April 1, 2013 and paid by Subordinated Creditor to Borrower for milestone fees, annual license maintenance fees, research fees, and/or commercial option exercise fees, in each case under any existing agreement between Subordinated Creditor and Borrower, net of any applicable tax withholding.

2. Subordination. The payment of all Subordinated Indebtedness is hereby expressly subordinated to the extent and in the manner hereafter set forth to the payment in full of Senior Debt; provided, however, that the Subordinated Indebtedness shall not be subordinated to the payment of Senior Debt insofar as Subordinated Creditor shall maintain the right to exercise the Subordinated Creditor Settlement Right (defined as "Subscriber Settlement Right" in the Note and Warrant Purchase Agreement between Borrower and Subordinated Creditor relating to the Mahyco Notes).

3. No Principal Payments on Subordinated Indebtedness while Blocking Notice is in Effect. Unless Senior Debt has previously been paid in full, during the period that a Blocking Notice (as defined below) is in effect, Subordinated Creditor shall not demand, receive or accept any payment from Borrower in respect of Subordinated Indebtedness, or exercise any right of or permit any setoff in respect of Subordinated Indebtedness, other than payment of

interest, without the prior written consent of Lewis. A "Blocking Notice" is a written notice from Lewis to Subordinated Creditor in accordance with paragraph 9 below that a Borrower Default has occurred and is continuing with respect to the Senior Debt. From and after the delivery of a Blocking Notice, Subordinated Creditor is prohibited from demanding, receiving or accepting payment of principal in respect of Subordinated Indebtedness unless and until such Borrower Default is waived in writing by Lewis or cured by Borrower. Nothing contained herein shall prevent the Subordinated Creditor from accelerating any Subordinated Indebtedness or receiving or accepting payments in respect of the Subordinated Indebtedness when a Blocking Notice is not in effect.

4. Receipt of Prohibited Payments. If Subordinated Creditor receives any payment on Subordinated Indebtedness that Subordinated Creditor is not entitled to receive under the provisions of this Agreement, Subordinated Creditor will hold the amount so received in trust for Lewis and will forthwith turn over such payment to Lewis in the form received (except for the endorsement of Subordinated Creditor where necessary) for application to then-existing Senior Debt in such manner as Lewis may deem appropriate in compliance with any written subordination agreement by Lewis. If Subordinated Creditor exercises any right of setoff that Subordinated Creditor is not permitted to exercise under the provisions of this Agreement, Subordinated Creditor will promptly pay over to Lewis, in immediately available funds, an amount equal to the amount of the claims or obligations offset for application to then-existing Senior Debt in such manner as Lewis may deem appropriate in compliance with any written subordination agreement by Lewis. If Subordinated Creditor fails to make any endorsement required under this Agreement, Lewis, through its officers, employees or agents, is hereby irrevocably appointed as the attorney-in-fact (which appointment is coupled with an interest) for Subordinated Creditor to make such endorsement in Subordinated Creditor's name.

5. Bankruptcy and Insolvency. In the event of any receivership, insolvency, bankruptcy, assignment for the benefit of creditors, reorganization or arrangement with creditors,

whether or not pursuant to bankruptcy law, the sale of all or substantially all of the assets of Borrower, dissolution, liquidation or any other marshalling of the assets or liabilities of Borrower, Subordinated Creditor will file all claims, proofs of claim or other instruments of similar character necessary to enforce the obligations of Borrower in respect of Subordinated Indebtedness and, unless and until Senior Debt has been paid in full, Subordinated Creditor will hold in trust for and will forthwith turn over to Lewis in the form received (except for the endorsement of Subordinated Creditor where necessary) any and all moneys, dividends or other assets received in any such proceedings on account of Subordinated Indebtedness for application to then-existing Senior Debt in such manner as Lewis may deem appropriate in compliance with any written subordination agreement by Lewis. If Subordinated Creditor fails to make any endorsement required under this Agreement, Lewis, through its officers, employees or agents, is hereby irrevocably appointed as the attorney-in-fact (which appointment is coupled with an interest) for Subordinated Creditor to make such endorsement in Subordinated Creditor's name, with the power but not the duty to demand, sue for, collect and receive any and all such moneys, dividends or other assets and give acquittance therefor and to file any claim, proof of claim or other instrument of similar character; and Subordinated Creditor will execute and deliver to Lewis such other and further powers-of-attorney or instruments as Lewis may request in order to accomplish the foregoing.

6. Restrictive Legend: Transfer of Subordinated Indebtedness. Subordinated Creditor will cause the Mahyco Notes and all other notes, bonds, debentures or other instruments evidencing the Subordinated Indebtedness or any part thereof to contain a specific statement thereon to the effect that the indebtedness thereby evidenced is subject to the provisions of this Agreement, and Subordinated Creditor will mark its books conspicuously to evidence the subordination effected hereby. As of the date hereof, Subordinated Creditor is the lawful holder of Mahyco Notes and has not transferred any interest therein to any other person.

7. Term. This Agreement shall commence on the Effective Date and continue in full force and effect until the Senior Debt is paid in full.

8. No Commitment. None of the provisions of this Agreement shall be deemed or construed to constitute or imply any commitment or obligation on the part of Lewis to make any future loans or other extensions of credit or financial accommodations to Borrower.

9. Notice. All notices and communications hereunder shall be in writing and shall be (i) personally delivered, (ii) transmitted by certified mail, return receipt requested, postage prepaid, or (iii) transmitted by telecopy, in each case addressed to the party to whom notice is being given at the address of such party first set forth above, or at such other address as may hereafter be designated in writing by that party. All such notices or other communications shall be deemed to have been given on (i) the date received if delivered personally, (ii) three (3) business days after the date of posting if delivered by mail, or (iii) the next business day after the date sent by overnight courier.

10. Conflict in Agreements. If the subordination provisions of any instrument evidencing Subordinated Indebtedness conflict with the terms of this Agreement, the terms of this Agreement shall govern the relationship between Lewis and Subordinated Creditor.

1l. No Waiver. No waiver shall be deemed to be made by Lewis of any of its rights hereunder unless the same shall be in writing signed on behalf of Lewis, and each such waiver, if any, shall be a waiver only with respect to the specific matter or matters to which the waiver relates and shall in no way impair the rights of Lewis or the obligations of Subordinated Creditor to Lewis in any other respect at any time.

12. Binding Effect: Acceptance. This Agreement shall be binding upon Subordinated Creditor and its successors and assigns and shall inure to the benefit of Lewis and Lewis's successors and assigns. Notice of acceptance by Lewis of this Agreement or of reliance by Lewis upon this Agreement is hereby waived by Subordinated Creditor.

13. Miscellaneous. The paragraph headings herein are included for convenience of reference only and shall not constitute a part of this Agreement for any other purpose. This Agreement may be executed in any number of counterparts, each of which shall be an original, but all of which together shall constitute one instrument.

14. Governing Laws: Consent to Jurisdiction and Venue. This Agreement shall be governed by and construed in accordance with the substantive laws (other than conflict laws) of the State of Arizona. Each party consents to the personal jurisdiction of the state and federal courts located in the State of Arizona in connection with any controversy related to this Agreement waives any argument that venue in any such forum is not convenient, and agrees that any litigation initiated by any of them in connection with this Agreement shall be venued in either the Superior Court of Maricopa County, Arizona or the United States District Court, District of Arizona.

[Signature Page Follows]

IN WITNESS WHEREOF, Subordinated Creditor has executed this Agreement as of the Effective Date first above-written.

SUBORDINATED CREDITOR:

Mahyco international Pte Ltd.

By: _____
Print Name: _____
Print Title: _____

Acknowledgement by Borrower

The undersigned, being the Borrower referred to in the foregoing Agreement, hereby (i) acknowledges receipt of a copy thereof, (ii) agrees to all of the terms and provisions thereof, (iii) agrees to and with Lewis that it shall make no payment on Subordinated Indebtedness that Subordinated Creditor would not be entitled to receive under the provisions of the Agreement, (iv) agrees that any such payment will constitute a default under the Senior Debt, and (v) agrees to mark its books conspicuously to evidence the subordination of Subordinated Indebtedness effected hereby.

Arcadia Biosciences, Inc.

By: _____
Print Name: Eric J. Rey
Print Title: President & CEO

Exhibit 4.5

CONVERTIBLE PROMISSORY NOTE

US$500,000 Dated as of September 30, 2013

FOR VALUE RECEIVED, ARCADIA BIOSCIENCES, INC., an Arizona corporation ("Borrower"), subject to and in accordance with the terms and conditions set forth in this Note (this "Note"), promises to pay to the order of Mahyco International Pte Ltd., a company formed under the laws of Singapore ("Lender"), the principal sum of US$500,000 (the "Loan") in lawful money of the United States of America, plus interest thereon at a variable rate equal to the prime rate listed in the Wall Street Journal plus 2% (the "Base Rate"), until this Note is paid in full and/or converted in accordance with the terms set forth in Section 6(d) of that certain Note and Warrant Purchase Agreement between Borrower and Lender of even date herewith (the "Purchase Agreement"). Changes in the rate of interest under this Note will take effect simultaneously with each change in the prime rate listed in the Wall Street Journal. Interest shall be compounded monthly and be calculated on the basis of the actual number of days elapsed over a year of 365 days. All or any portion of the outstanding balance of this Note (principal and interest) may be converted as provided in the Purchase Agreement, the provisions of which are incorporated herein by reference.

1. **Payment**. Unless earlier converted in accordance with Section 6(d) of the Purchase Agreement, and subject to Section 6 hereof, all unpaid principal and all accrued and unpaid interest under this Note shall be due and payable on the fifth anniversary of the date hereof (the "Maturity Date").

2. **Place of Payment**. The principal and interest, and any other amounts due under this Note, shall be payable at the address of Lender set forth in the Purchase Agreement, or at such other place as Lender, from time to time, may designate in writing.

3. **Prepayment**. Upon ninety (90) days' prior written notice by Borrower to Lender, Borrower shall have the privilege of prepaying the Loan at any time by paying all principal then outstanding under this Note, plus all unpaid interest accrued under this Note as of the date of payment; provided, however, that Lender shall be entitled to exercise its conversion right in accordance with Section 6(d) of the Purchase Agreement prior to expiration of such 90-day period.

4. **Certain Provisions Regarding Payments.** All payments made under this Note shall be applied first to accrued but unpaid interest and second to unpaid principal. Acceptance by Lender of any payment in an amount less than the amount then due on any indebtedness shall be deemed an acceptance on account only, notwithstanding any notation on or accompanying such partial payment to the contrary, and shall not in any way (a) waive or excuse the existence of an Event of Default (as hereinafter defined), (b) waive, impair or extinguish any right or remedy available to Lender hereunder, or (c) waive the requirement of punctual payment and performance or constitute a novation in any respect.

5. **Borrower Representations and Warranties**. Borrower represents and warrants to Lender that:

(a) This Note is a valid and binding agreement of Borrower enforceable against Borrower in accordance with its terms (subject to applicable bankruptcy, reorganization, insolvency and similar laws and to moratorium laws from time to time in effect);

(b) This Note does not conflict with any law, agreement or obligation by which Borrower is bound; and

(c) Borrower is a corporation duly incorporated, validly existing and in good standing under the laws of the State of Arizona.

6. **Event of Default**. The occurrence of any one or more of the following shall constitute an "Event of Default" under this Note:

(a) Borrower fails to pay any amounts payable by Borrower under the terms of this Note, and such failure is not cured by Borrower within ten (10) days of written notice from Lender;

(b) Borrower breaches in any material respect any covenant of Borrower in the Purchase Agreement, and such breach is not cured within thirty (30) days of written notice from Lender;

(c) Borrower commences any case, proceeding or other action (i) under any existing or future law relating to bankruptcy, insolvency, reorganization, or other relief of debtors, seeking to have an order for relief entered with respect to it, or seeking to adjudicate it as bankrupt or insolvent, or seeking reorganization, arrangement, adjustment, winding-up, liquidation, dissolution, composition or other relief with respect to it or its debts, or (ii) seeking appointment of a receiver, trustee, custodian, conservator or other similar official for it or for all or any substantial part of its assets, or Borrower makes a general assignment for the benefit of its creditors;

(d) there is commenced against Borrower any case, proceeding or other action of a nature referred to in clause (c) above which (i) results in the entry of an order for relief or any such adjudication or appointment or (ii) remains un-dismissed, un-discharged or un-bonded for a period of sixty (60) days; or

(e) There is a declared default after all applicable cure periods are applied with respect to any Senior Indebtedness (as defined in the Purchase Agreement), and such default is not cured by Borrower within the said applicable cure periods.

7. **Remedies.** Upon the occurrence of an Event of Default, Lender may, in Lender's sole and absolute discretion, accelerate this Note by declaring in a written notice to Borrower that the then entire outstanding principal sum hereof, together with all accrued and unpaid interest hereon, is immediately due and payable. In the event that all such sums are not paid within five (5) business days following receipt by Borrower of such notice of acceleration, and notwithstanding any applicable subordination, the entire amount accelerated (inclusive of any accrued and unpaid interest) will bear interest from the date of the Event of Default until paid at a rate equal to the lower of (a) the Base Rate plus 3%, and (b) the highest rate then permitted by law (the "Default Rate").

8. **Costs and Expenses of Enforcement.** Borrower agrees to pay to Lender all costs of suit and other expenses reasonably incurred by Lender in connection with any Event of Default or other action to enforce the terms of this Note.

9. **No Waiver**. Lender's failure to exercise its option to accelerate the indebtedness evidenced by this Note shall not constitute a waiver of the right to exercise that option at any other time so long as any Event of Default remains outstanding and uncured. Lender shall not be deemed, by any act of omission or commission, to have waived any of its rights or remedies under this Note unless the waiver is in writing and signed by Lender, and then only to the extent

specifically set forth in the writing. A waiver on one event shall not be construed as continuing or as a bar to or waiver of any right or remedy to a subsequent event.

10. **Remedies Cumulative**. The remedies of Lender as provided in this Note shall be cumulative and concurrent, may be pursued singly, successively, or together at the sole discretion of Lender and may be exercised as often as occasion for their exercise shall occur, and in no event shall the failure to exercise any such right or remedy be construed as a waiver or release.

11. **Waiver**. Borrower hereby waives presentment for payment, demand, notice of demand, notice of nonpayment or dishonor, protest and notice of protest of this Note, and all other notices in connection with the delivery, acceptance, performance, default, or enforcement of the payment of this Note.

12. **Savings Clause**. If any provision of this Note is held to be invalid or unenforceable by a court of competent jurisdiction, the other provisions of this Note shall remain in full force and effect.

13. **Governing Law; Forum.** This instrument shall be governed by and construed according to the laws of the State of Arizona (without giving effect to its conflicts of law provisions) and any proceeding arising out of this Note shall be brought in a State or Federal Court located in Maricopa County, Arizona.

14. **Unsecured; Seniority; Subordination**. The indebtedness evidenced by this Note is unsecured. Subject to the seniority over the Existing Notes (as defined in the Purchase Agreement), the indebtedness evidenced by this Note is expressly subordinated in right of priority and payment to all "Senior Indebtedness" as specified in the Purchase Agreement.

15. Transferability. Subject to compliance with applicable federal and state securities laws in the United States, Singapore and any other jurisdiction applicable to Lender, including without limitation the restrictions set forth in Section 4 of the Purchase Agreement, this Note and all rights hereunder are transferable in whole or in part by Lender to any affiliate of Lender (including, without limitation, partners, members and directors) upon written notice to the Company. Absent the prior written consent of the Company, Lender may not assign this Note to any other person or entity. In the event of a partial transfer, the Company will issue to Lender and the permitted transferee one or more appropriate new Notes.

16. **Miscellaneous**. Whenever used, unless the context otherwise clearly indicates, words used in the singular shall include the plural, the plural the singular, the use of any gender shall be applicable to all genders, and the words "Lender" and "Borrower" shall be deemed to include the respective heirs, personal representatives, successors, and assigns of Lender and Borrower. The headings herein are for purposes of reference only and shall not otherwise affect the meaning or interpretation of any provision hereof. If Borrower consists of more than one person, corporation or other entity, the obligations and liabilities of such persons, corporations or other entities under this Note shall be joint and several, and the word "Borrower" shall mean all or some of any of them. This Note may be executed in two or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument. Time is of the essence as to each provision of this Note.

17. **Construction.** Capitalized terms not defined herein shall have the meanings ascribed to such terms in the Purchase Agreement. Lender has participated jointly in the negotiation and drafting of this Note and has been advised to engage, and has had the opportunity to engage, Lender's own independent legal counsel in connection with the negotiation of this Note and the transactions contemplated hereby, including tax consequences. In the event any ambiguity or question of intent arises, this Note is to be construed as jointly drafted by the parties hereto, and no presumption or burden of proof is to arise favoring or disfavoring any party hereto.

IN WITNESS WHEREOF, Borrower, intending to be legally bound, has duly executed and delivered this Note as of the date first written above.

ARCADIA BIOSCIENCES, INC.

By: /s/ Eric J. Rey
Name: Eric J. Rey, President & CEO

Address: 4222 E Thomas Rd, Suite 245
Phoenix, AZ 85018

Exhibit 4.6

CONVERTIBLE PROMISSORY NOTE

US$4,500,000 Dated as of December 11, 2013

FOR VALUE RECEIVED, ARCADIA BIOSCIENCES, INC., an Arizona corporation ("Borrower"), subject to and in accordance with the terms and conditions set forth in this Note (this "Note"), promises to pay to the order of Mahyco International Pte Ltd., a company formed under the laws of Singapore ("Lender"), the principal sum of US$4,500,000 (the "Loan") in lawful money of the United States of America, plus interest thereon at a variable rate equal to the prime rate listed in the Wall Street Journal plus 2% (the "Base Rate"), until this Note is paid in full and/or converted in accordance with the terms set forth in Section 6(d) of that certain Note and Warrant Purchase Agreement between Borrower and Lender of even date herewith (the "Purchase Agreement"). Changes in the rate of interest under this Note will take effect simultaneously with each change in the prime rate listed in the Wall Street Journal. Interest shall be compounded monthly and be calculated on the basis of the actual number of days elapsed over a year of 365 days. All or any portion of the outstanding balance of this Note (principal and interest) may be converted as provided in the Purchase Agreement, the provisions of which are incorporated herein by reference.

1. **Payment**. Unless earlier converted in accordance with Section 6(d) of the Purchase Agreement, and subject to Section 6 hereof, all unpaid principal and all accrued and unpaid interest under this Note shall be due and payable on the fifth anniversary of the date hereof (the "Maturity Date").

2. **Place of Payment**. The principal and interest, and any other amounts due under this Note, shall be payable at the address of Lender set forth in the Purchase Agreement, or at such other place as Lender, from time to time, may designate in writing.

3. **Prepayment**. Upon ninety (90) days' prior written notice by Borrower to Lender, Borrower shall have the privilege of prepaying the Loan at any time by paying all principal then outstanding under this Note, plus all unpaid interest accrued under this Note as of the date of payment; provided, however, that Lender shall be entitled to exercise its conversion right in accordance with Section 6(d) of the Purchase Agreement prior to expiration of such 90-day period.

4. **Certain Provisions Regarding Payments.** All payments made under this Note shall be applied first to accrued but unpaid interest and second to unpaid principal. Acceptance by Lender of any payment in an amount less than the amount then due on any indebtedness shall be deemed an acceptance on account only, notwithstanding any notation on or accompanying such partial payment to the contrary, and shall not in any way (a) waive or excuse the existence of an Event of Default (as hereinafter defined), (b) waive, impair or extinguish any right or remedy available to Lender hereunder, or (c) waive the requirement of punctual payment and performance or constitute a novation in any respect.

5. **Borrower Representations and Warranties**. Borrower represents and warrants to Lender that:

(a) This Note is a valid and binding agreement of Borrower enforceable against Borrower in accordance with its terms (subject to applicable bankruptcy, reorganization, insolvency and similar laws and to moratorium laws from time to time in effect);

(b) This Note does not conflict with any law, agreement or obligation by which Borrower is bound; and

(c) Borrower is a corporation duly incorporated, validly existing and in good standing under the laws of the State of Arizona.

6. **Event of Default**. The occurrence of any one or more of the following shall constitute an "Event of Default" under this Note:

(a) Borrower fails to pay any amounts payable by Borrower under the terms of this Note, and such failure is not cured by Borrower within ten (10) days of written notice from Lender;

(b) Borrower breaches in any material respect any covenant of Borrower in the Purchase Agreement, and such breach is not cured within thirty (30) days of written notice from Lender;

(c) Borrower commences any case, proceeding or other action (i) under any existing or future law relating to bankruptcy, insolvency, reorganization, or other relief of debtors, seeking to have an order for relief entered with respect to it, or seeking to adjudicate it as bankrupt or insolvent, or seeking reorganization, arrangement, adjustment, winding-up, liquidation, dissolution, composition or other relief with respect to it or its debts, or (ii) seeking appointment of a receiver, trustee, custodian, conservator or other similar official for it or for all or any substantial part of its assets, or Borrower makes a general assignment for the benefit of its creditors;

(d) there is commenced against Borrower any case, proceeding or other action of a nature referred to in clause (c) above which (i) results in the entry of an order for relief or any such adjudication or appointment or (ii) remains un-dismissed, un-discharged or un-bonded for a period of sixty (60) days; or

(e) There is a declared default after all applicable cure periods are applied with respect to any Senior Indebtedness (as defined in the Purchase Agreement), and such default is not cured by Borrower within the said applicable cure periods.

7. **Remedies.** Upon the occurrence of an Event of Default, Lender may, in Lender's sole and absolute discretion, accelerate this Note by declaring in a written notice to Borrower that the then entire outstanding principal sum hereof, together with all accrued and unpaid interest hereon, is immediately due and payable. In the event that all such sums are not paid within five (5) business days following receipt by Borrower of such notice of acceleration, and notwithstanding any applicable subordination, the entire amount accelerated (inclusive of any accrued and unpaid interest) will bear interest from the date of the Event of Default until paid at a rate equal to the lower of (a) the Base Rate plus 3%, and (b) the highest rate then permitted by law (the "Default Rate").

8. **Costs and Expenses of Enforcement.** Borrower agrees to pay to Lender all costs of suit and other expenses reasonably incurred by Lender in connection with any Event of Default or other action to enforce the terms of this Note.

9. **No Waiver**. Lender's failure to exercise its option to accelerate the indebtedness evidenced by this Note shall not constitute a waiver of the right to exercise that option at any other time so long as any Event of Default remains outstanding and uncured. Lender shall not be deemed, by any act of omission or commission, to have waived any of its rights or remedies under this Note unless the waiver is in writing and signed by Lender, and then only to the extent

specifically set forth in the writing. A waiver on one event shall not be construed as continuing or as a bar to or waiver of any right or remedy to a subsequent event.

10. **Remedies Cumulative**. The remedies of Lender as provided in this Note shall be cumulative and concurrent, may be pursued singly, successively, or together at the sole discretion of Lender and may be exercised as often as occasion for their exercise shall occur, and in no event shall the failure to exercise any such right or remedy be construed as a waiver or release.

11. **Waiver**. Borrower hereby waives presentment for payment, demand, notice of demand, notice of nonpayment or dishonor, protest and notice of protest of this Note, and all other notices in connection with the delivery, acceptance, performance, default, or enforcement of the payment of this Note.

12. **Savings Clause**. If any provision of this Note is held to be invalid or unenforceable by a court of competent jurisdiction, the other provisions of this Note shall remain in full force and effect.

13. **Governing Law; Forum.** This instrument shall be governed by and construed according to the laws of the State of Arizona (without giving effect to its conflicts of law provisions) and any proceeding arising out of this Note shall be brought in a State or Federal Court located in Maricopa County, Arizona.

14. **Unsecured; Seniority; Subordination**. The indebtedness evidenced by this Note is unsecured. Subject to the seniority over the Existing Notes (as defined in the Purchase Agreement), the indebtedness evidenced by this Note is expressly subordinated in right of priority and payment to all "Senior Indebtedness" as specified in the Purchase Agreement.

15. Transferability. Subject to compliance with applicable federal and state securities laws in the United States, Singapore and any other jurisdiction applicable to Lender, including without limitation the restrictions set forth in Section 4 of the Purchase Agreement, this Note and all rights hereunder are transferable in whole or in part by Lender to any affiliate of Lender (including, without limitation, partners, members and directors) upon written notice to the Company. Absent the prior written consent of the Company, Lender may not assign this Note to any other person or entity. In the event of a partial transfer, the Company will issue to Lender and the permitted transferee one or more appropriate new Notes.

16. **Miscellaneous**. Whenever used, unless the context otherwise clearly indicates, words used in the singular shall include the plural, the plural the singular, the use of any gender shall be applicable to all genders, and the words "Lender" and "Borrower" shall be deemed to include the respective heirs, personal representatives, successors, and assigns of Lender and Borrower. The headings herein are for purposes of reference only and shall not otherwise affect the meaning or interpretation of any provision hereof. If Borrower consists of more than one person, corporation or other entity, the obligations and liabilities of such persons, corporations or other entities under this Note shall be joint and several, and the word "Borrower" shall mean all or some of any of them. This Note may be executed in two or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument. Time is of the essence as to each provision of this Note.

17. **Construction.** Capitalized terms not defined herein shall have the meanings ascribed to such terms in the Purchase Agreement. Lender has participated jointly in the negotiation and drafting of this Note and has been advised to engage, and has had the opportunity to engage, Lender's own independent legal counsel in connection with the negotiation of this Note and the transactions contemplated hereby, including tax consequences. In the event any ambiguity or question of intent arises, this Note is to be construed as jointly drafted by the parties hereto, and no presumption or burden of proof is to arise favoring or disfavoring any party hereto.

IN WITNESS WHEREOF, Borrower, intending to be legally bound, has duly executed and delivered this Note as of the date first written above.

ARCADIA BIOSCIENCES, INC.

By: /s/ Eric J. Rey
Name: Eric J. Rey, President & CEO

Address: 4222 E Thomas Rd, Suite 245
Phoenix, AZ 85018

THE SECURITIES REPRESENTED BY THIS WARRANT HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933 (THE "**ACT**") OR UNDER THE SECURITIES LAWS OF ANY STATE. THESE SECURITIES MAY NOT BE OFFERED FOR SALE, SOLD, OR OTHERWISE TRANSFERRED, EXCEPT PURSUANT TO AN EFFECTIVE REGISTRATION STATEMENT FILED UNDER THE SECURITIES ACT OF 1933 OR PURSUANT TO AN EXEMPTION FROM THE REGISTRATION REQUIREMENTS OF SUCH ACT, THE AVAILABILITY OF WHICH EXEMPTION MUST BE ESTABLISHED TO THE REASONABLE SATISFACTION OF THE COMPANY. THE TRANSFER OF THIS INSTRUMENT IS RESTRICTED AS DESCRIBED HEREIN.

Issue Date: December 11, 2013

STOCK PURCHASE WARRANT
ARCADIA BIOSCIENCES, INC.

This Warrant is issued, for value received, to Mahyco International Pte Ltd., a company formed under the laws of Singapore ("**Holder**"), by Arcadia Biosciences, Inc., an Arizona corporation ("**Company**"), pursuant to that certain Note and Warrant Purchase Agreement between Company and Holder dated September 27, 2013 (the "**Purchase Agreement**"). Capitalized terms not defined herein shall have the meanings ascribed to such terms in the Purchase Agreement.

1. Purchase of Shares. Subject to the terms and conditions as hereinafter set forth, the Holder of this Warrant is entitled, upon surrender of this Warrant to the Company, to purchase from the Company up to 302,665 shares of the Company's Common Stock (the "**Exercise Stock**").

2. Exercise Price. The purchase price for each share of Exercise Stock subject to this Warrant will be equal to US$4.13 per share (the "**Exercise Price**").

3. Exercise Period. This Warrant shall immediately vest on the Issue Date stated above and remain exercisable until and including the fifth anniversary of the Issue Date.

4. Method of Exercise; Expenses.

(a) While this Warrant remains outstanding and exercisable in accordance with Section 3 above, the Holder may exercise, in whole or in part, and from time to time, the purchase rights evidenced hereby. Such exercise will be effected by:

(i) the surrender of this Warrant, together with a duly executed copy of the form of subscription attached hereto, to the Secretary of the Company at its principal offices; and

(ii) the payment to the Company in cash or check of an amount equal to the aggregate Exercise Price for the number of shares of Exercise Stock being purchased.

(b) The Company will pay all expenses, taxes (other than transfer taxes) and other charges payable in connection with the preparation, issuance and delivery of this Warrant and the Exercise Stock.

(c) Each exercise of this Warrant will be deemed to have been effected immediately prior to the close of business on the day on which this Warrant will have been surrendered to the Company as provided in Section 4(a) above. At such time, the person or persons in whose name or names any certificates for the shares of Exercise Stock will be issuable upon such exercise will be deemed to have become the Holder or holders of record of the Exercise Stock represented by such certificates.

(d) If this Warrant is exercised in part only, the Company shall, if this Warrant is surrendered for cancellation, execute and deliver a new Warrant of the same tenor evidencing the right of the Holder to purchase the balance of the Exercise Stock hereunder upon the same terms and conditions as herein set forth.

5. Certificates for Shares. Upon the exercise of the purchase rights evidenced by this Warrant, one or more certificates for the number of shares of Exercise Stock so purchased will be issued as soon as practicable thereafter, and in any event within 10 business days of the delivery of the subscription notice.

6. Valid Issuance of Shares. The Company covenants that: (i) it will at all times keep reserved for issuance upon exercise hereof such number of shares of Exercise Stock as will be issuable upon such exercise, and (ii) the shares of Exercise Stock, when issued pursuant to the exercise of this Warrant, will be duly and validly issued, fully paid and nonassessable and free from all taxes, liens, charges and preemptive or similar rights with respect to the issuance thereof.

7. Adjustment of Exercise Price and Type and Number of Shares.

(a) The Exercise Price and the number and kind of shares of Exercise Stock (or other securities) purchasable hereunder will be subject to adjustment as follows: In case the Company will at any time prior to the expiration of this Warrant, (i) pay a dividend or make a distribution on the outstanding shares of Exercise Stock, (ii) subdivide the outstanding shares of Exercise Stock into a larger number of shares of Exercise Stock, (iii) combine the outstanding shares of Exercise Stock into a smaller number of shares of Exercise Stock, or (iv) issue any equity interest in a reclassification of Exercise Stock, then, and in each such case, the Exercise Price and number of shares of Exercise Stock (or other securities) purchasable hereunder in effect immediately prior to such event will be adjusted (and any other appropriate actions will be taken by the Company) so that the Holder of this Warrant will be entitled to receive, for the same aggregate consideration, the number of shares of Exercise Stock or other securities of the Company that the Holder would have owned or been entitled to receive upon or by reason of any of the events described above, had this Warrant been exercised immediately prior to the occurrence of such event with respect to any unexercised portion of this Warrant. Any adjustment made pursuant to this Section 7(a) will become effective (x) in the case of any such dividend or distribution, on the date immediately following the close of business on the record date for the determination of Holders of Exercise Stock entitled to receive such dividend or

distribution or (y) in the case of any such subdivision, combination or reclassification, on the close of business on the day upon which such corporate action becomes effective.

(b) If after the date hereof the Company shall enter into any Reorganization (as hereinafter defined), then, as a condition of such Reorganization, lawful provisions shall be made, and duly executed documents evidencing the same from the Company or its successor shall be delivered to the Holder, so that the Holder shall thereafter have the right to exercise this Warrant as provided in Section 1 prior to the consummation of such Reorganization, and shall receive, in lieu of the Exercise Stock (or other securities) issuable upon such an exercise prior to such consummation or such effective date, the stock and other securities and property (including cash) to which the Holder is entitled upon the consummation of such Reorganization. The Company shall notify the Holder of its plan to enter into any Reorganization at least thirty (30) days prior to the consummation of such Reorganization and shall make the aforesaid lawful provisions and deliver the aforesaid duly executed documents as soon as possible after providing such notice, but in any event prior to the consummation of such Reorganization. If the Holder elects not to exercise this Warrant prior to consummation of such Reorganization, this Warrant will terminate in its entirety on consummation of such Reorganization. For the purposes of this Section 7(b), the term "**Reorganization**" shall include without limitation any reclassification, capital reorganization, conversion or change of the Exercise Stock (other than as a result of a subdivision, combination or stock dividend provided for in Section 7(a) hereof), or any consolidation of the Company with, or merger of the Company into, another corporation or other business organization (other than a merger in which the Company is the surviving corporation and which does not result in any reclassification or change of the outstanding Exercise Stock), or any sale or conveyance to another corporation or other business organization of all or substantially all of the assets of the Company.

(c) When any adjustment is required to be made in the number or kind of shares purchasable upon exercise of the Warrant, or in the Exercise Price, the Company will promptly notify the Holder of this Warrant of such event and of the number of shares of Exercise Stock or other securities or property thereafter purchasable upon exercise of this Warrant.

8. No Fractional Shares or Scrip. No fractional shares or scrip representing fractional shares will be issued upon the exercise of this Warrant, but in lieu of such fractional shares the Company will make a cash payment therefor on the basis of the Exercise Price then in effect.

9. No Stockholder Rights. Prior to exercise of this Warrant, the Holder will not be entitled to any rights of a stockholder with respect to the shares of Exercise Stock, including (without limitation) the right to vote such shares, receive dividends or other distributions thereon, or be notified of stockholder meetings.

10. Transferability. Subject to compliance with applicable federal and state securities laws in the United States, Singapore and any other jurisdiction applicable to Holder, including without limitation the restrictions set forth in Section 4 of the Purchase Agreement, this Warrant and all rights hereunder are transferable in whole or in part by the Holder of this Warrant to any affiliate of the Holder (including, without limitation, partners, members and directors) upon written notice to the Company. Absent the prior written consent of the Company, Holder may

not assign this Warrant to any other person or entity. In the event of a partial transfer, the Company will issue to Holder and the permitted transferee one or more appropriate new Warrants.

11. Successors and Assigns. The terms and provisions of this Warrant will inure to the benefit of, and be binding upon, the Company and the Holders hereof and their respective successors and permitted assigns.

12. Amendments and Waivers. Any waiver or amendment of any term of this Warrant must be in writing signed by the Holder and by the Company and will be binding upon any subsequent holder of this Warrant.

13. Notices. All notices, requests, consents and other communications hereunder will be in writing, will be addressed to the receiving party's address as set forth on the books of the Company or to such other address as a party may designate by notice hereunder, and will be either (i) delivered by hand, (ii) sent by reputable overnight courier, or (iii) sent by registered or certified mail, return receipt requested, postage prepaid. All notices, requests, consents, and other communications hereunder will be deemed to have been given either (x) if by hand, at the time of the delivery thereof to the receiving party at the address of such party set forth above, (y) if sent by overnight courier, on the next business day following the day such notice is delivered to the courier service, or (z) if sent by registered or certified mail, on the 5th business day following the day such mailing is made.

14. Governing Law. This Warrant will be governed by the laws of the State of Arizona (without giving effect to the conflict of law principles thereof).

THE COMPANY:

Arcadia Biosciences, Inc., an Arizona corporation

By: /s/ Eric J. Rey
Name: Eric J. Rey
Title: President & CEO
Address: 4222 E Thomas Rd, Suite 245
Phoenix, AZ 85018

SUBSCRIPTION

Arcadia Biosciences, Inc., an Arizona corporation

Attention: Corporate Secretary

The undersigned, the Holder of the attached Warrant, hereby irrevocably elects to purchase, pursuant to the provisions of the attached Warrant, shares of Exercise Stock of Arcadia Biosciences, Inc., an Arizona corporation.

Payment of the exercise price per share required under such Warrant accompanies this Subscription.

WARRANT HOLDER:

Name of Holder: _____

By: _____

Print Name: _____

Print Title _____

Date: _____

Exhibit 4.8

NEITHER THIS WARRANT NOR ANY SECURITIES THAT MAY BE ISSUED UPON EXERCISE HEREOF HAVE BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED, OR REGISTERED OR QUALIFIED UNDER ANY STATE SECURITIES LAWS. THIS WARRANT HAS BEEN ACQUIRED FOR INVESTMENT AND NOT WITH A VIEW TO ITS DISTRIBUTION OR RESALE, AND THIS WARRANT AND ANY SUCH SECURITIES MAY NOT BE SOLD, PLEDGED, OR OTHERWISE TRANSFERRED WITHOUT AN EFFECTIVE REGISTRATION STATEMENT FOR THIS WARRANT OR SUCH SECURITIES UNDER THE ACT AND APPLICABLE STATE SECURITIES LAWS, OR AN OPINION OF COUNSEL SATISFACTORY TO THE CORPORATION TO THE EFFECT THAT SUCH REGISTRATION IS NOT REQUIRED.

Warrant No. CSW-XX

Number of Shares:
(subject to adjustment)

Date of Issuance: March , 2014

ARCADIA BIOSCIENCES INC.

COMMON STOCK PURCHASE WARRANT

Arcadia Biosciences Inc., an Arizona corporation (the "Company"), for value received, hereby certifies that , or its registered assigns (the "Registered Holder"), is entitled, subject to the terms and conditions set forth below, to purchase from the Company, at any time or from time to time on or after March , 2014, and on or before the later of (i) 5:00 p.m. (Eastern time) on the fifth (5th) anniversary of the date hereof, or (ii) the second (2nd) anniversary of the consummation of an initial public offering of equity securities by the Company (an "IPO") (the "Exercise Period"), up to shares of Common Stock, no par value, of the Company ("Common Stock"), at a purchase price of US$4.5410 per share; provided, however, that upon the consummation of a transaction that qualifies as a "Merger Transaction" as defined in the Company's Amended and Restated Articles of Incorporation, this Warrant must be exercised at or prior to the closing of such Merger Transaction in accordance with Section 1 below, or the Exercise Period will terminate and this Warrant will automatically expire immediately after such closing, subject to the possible extensions of the Exercise Period provided by Section 6 below. The shares purchasable upon exercise of this Warrant, and the purchase price per share, each as adjusted from time to time pursuant to the provisions of this Warrant, are hereinafter referred to as the "Warrant Shares" and the "Purchase Price," respectively. This Warrant is one of a series of Warrants issued by the Company of like tenor, except as to the number of shares of Common Stock subject thereto (collectively, the "Company Warrants").

1. **Exercise.**

(a) Exercise Procedure. The Registered Holder may, at its option, elect to exercise this Warrant, in whole or in part, by surrendering this Warrant at the principal office of the Company, or at such other office or agency as the Company may designate, with the purchase form appended hereto as Exhibit I (the "Purchase Form") duly executed by or on behalf of the Registered Holder, accompanied by payment in full, in lawful money of the United States, of the Purchase Price payable in respect of the number of Warrant Shares purchased upon such exercise (a "Cash Exercise"). In lieu of a Cash Exercise of this Warrant, the Registered Holder may elect to receive upon exercise of this Warrant such number of Warrant Shares determined according to the following formula (a "Cashless Exercise"):

$$X = \frac{Y * (A - B)}{A}$$

Where

X = The number of Warrant Shares to be issued to the holder of this Warrant.
Y = The number of Warrant Shares being surrendered by the Registered Holder in a Cashless Exercise under this Warrant.
A = The Fair Market Value (as determined in Section 2(c) below) of one (1) Warrant Share.
B = The Purchase Price (as adjusted to the date of such calculations).

A facsimile signature of the Registered Holder on the Purchase Form shall be sufficient for purposes of exercising this Warrant.

(b) Exercise Date. Each exercise of this Warrant shall be deemed to have been effected immediately prior to the close of business on the business day on which this Warrant, the completed and executed Purchase Form, and the Purchase Price (either in cash in a Cash Exercise or in the relinquishment of the right to acquire the appropriate number of shares of Common Stock in a Cashless Exercise) shall have been surrendered to the Company as provided in Subsection 1(a) above (the "Exercise Date"). At such time, the Person or Persons in whose name or names any certificates for Warrant Shares shall be issuable upon such exercise as provided in Subsection 1(c) below shall be deemed to have become the holder or holders of record of the Warrant Shares represented by such certificates.

(c) Issuance of Certificates. As soon as practicable after the exercise of this Warrant in whole or in part, the Company, at its expense, will cause to be issued in the name of, and delivered to, the Registered Holder, or as the Registered Holder (upon payment by the Registered Holder of any applicable transfer taxes) may direct:

(i) a certificate for the number of full Warrant Shares to which the Registered Holder shall be entitled upon such exercise plus, in lieu of any fractional share to which the Registered Holder would otherwise be entitled, cash in an amount determined pursuant to Section 3 hereof; and

(ii) in case such exercise is in part only, a new warrant or warrants (dated the date hereof) of like tenor, calling in the aggregate on the face or faces thereof for the number of Warrant Shares equal (without giving effect to any adjustment therein) to the number of such Warrant Shares called for on the face of this Warrant minus the number of Warrant Shares for which this Warrant was so exercised.

2. **Adjustments.**

(a) Adjustment for Stock Splits and Combinations. If the Company shall at any time or from time to time after the date on which this Warrant was first issued (or, if this Warrant was issued upon partial exercise of, or in replacement of, another warrant of like tenor, then the date on which such original warrant was first issued) (the "Original Issue Date") effect a subdivision of the outstanding shares of Common Stock (whether by stock split, stock dividend or other means), the Purchase Price then in effect immediately before that subdivision shall be proportionately decreased and the number of Warrant Shares shall be proportionately increased. If the Company shall at any time or from time to time after the Original Issue Date combine the outstanding shares of Common Stock, the Purchase Price then in effect immediately before the combination shall be proportionately increased and the number of Warrant Shares shall be proportionately decreased. Any adjustment under this Subsection 2(a) shall become effective at the close of business on the date the subdivision or combination becomes effective.

(b) Adjustment for Reorganization. In case at any time or from time to time prior to the exercise of this Warrant, the Company (i) effects a capital reorganization, reclassification, or recapitalization, (ii) consolidates with or merges with or into any other person or entity, or (iii) transfers all or substantially all of its properties or assets to any other person or entity under any plan or arrangement contemplating the dissolution of the Company, then in each such case, the Registered Holder of this Warrant, upon exercise hereof at any time after or simultaneously with the consummation of such reorganization, recapitalization, consolidation, or merger or the effective date of such dissolution, as the case may be, will receive, in lieu of the Warrant Shares issuable upon such exercise before such consummation or effective date, the other securities, cash, and/or property to which such Registered Holder would have been entitled upon such consummation or in connection with such dissolution, as the case may be, if such Registered Holder had exercised this Warrant immediately prior thereto, all subject to further adjustment thereafter as provided herein.

(c) Fair Market Value. The Fair Market Value per share of Common Stock shall be determined as follows:

(i) If traded on a securities exchange, the Nasdaq Capital Market or the Nasdaq Global Market, the Fair Market Value shall be deemed to be the average of the closing prices of the capital stock of the Company of the Company on such exchange or market over the five (5) business days ending immediately prior to the Exercise Date;

(ii) If actively traded over-the-counter, the Fair Market Value shall be deemed to be the average of the closing bid prices over the thirty (30) day period ending immediately prior to the Exercise Date; and

(iii) If there is no active public market, the Fair Market Value shall be determined in good faith by the Board of Directors of the Company upon a review of all relevant factors; and

(iv) Notwithstanding the foregoing, in the event the Warrant is exercised in connection with the Company's initial public offering of Common Stock, the Fair Market Value per share shall be the per share offering price to the public of the Company's initial public offering.

(d) Certificate as to Adjustments. Upon the occurrence of each adjustment or readjustment of the Purchase Price pursuant to this Section 2, the Company at its expense shall, as promptly as reasonably practicable but in any event not later than ten (10) days thereafter, compute such adjustment or readjustment in accordance with the terms hereof and furnish to the Registered Holder a certificate setting forth such adjustment or readjustment (including the kind and amount of securities, cash or other property for which this Warrant shall be exercisable and the Purchase Price) and showing in detail the facts upon which such adjustment or readjustment is based. The Company shall, as promptly as reasonably practicable after the written request at any time of the Registered Holder (but in any event not later than ten (10) days thereafter), furnish or cause to be furnished to the Registered Holder a certificate setting forth (i) the Purchase Price then in effect and (ii) the number of Warrant Shares and the amount, if any, of other securities, cash or property which then would be received upon the exercise of this Warrant.

3. **No Fractional Shares.** The Company shall not be required upon the exercise of this Warrant to issue any fractional shares of Common Stock, but shall pay the value thereof to the Registered Holder in cash on the basis of the Fair Market Value per share of Common Stock, as determined pursuant to Section 2(c) above.

4. **Transfers, etc.**

(a) Notwithstanding anything to the contrary contained herein, this Warrant and the Warrant Shares shall not be sold or transferred unless either (i) they first shall have been registered under the Securities Act, or (ii) such sale or transfer shall be exempt from the registration requirements of the Securities Act and the Company shall have been furnished with an opinion of legal counsel, reasonably satisfactory to the Company, to the effect that such sale or transfer is exempt from the registration requirements of the Securities Act. Notwithstanding the foregoing, no registration or opinion of counsel shall be required for a transfer by a Registered Holder which is an entity to a wholly owned subsidiary of such entity, a transfer by a Registered Holder which is a partnership to a partner of such partnership or a retired partner of such partnership or to the estate of any such partner or retired partner, or a transfer by a Registered Holder which is a limited liability company to a member of such limited liability company or a retired member or to the estate of any such member or retired member, provided that the transferee in each case agrees in writing to be subject to the terms of this Section 4.

(b) Any certificate that may be issued representing Warrant Shares shall bear a legend substantially in the following form, in addition to any other legends:

> "The securities represented hereby have not been registered under the Securities Act of 1933, as amended, or any state securities laws and neither the securities nor any interest therein may not be offered, sold, transferred, pledged or otherwise disposed of except pursuant to an effective registration under such act or an exemption from registration, which, in the opinion of counsel reasonably satisfactory to counsel for this corporation, is available."

The foregoing legend shall be removed from the certificates representing any Warrant Shares, at the request of the holder thereof, following any sale of such Warrant Shares pursuant to Rule 144 under the Securities Act (and after the holder thereof has submitted a written request for removal of the legend indicating that the holder has complied with the applicable provisions of Rule 144 accompanied by an opinion of legal counsel, reasonably satisfactory to the

Company, to the effect that such removal is appropriate under the Securities Act) or at such time as the Warrant Shares are sold or transferred in accordance with the requirements of a registration statement of the Company on such form as may then be in effect.

(c) The Company will maintain a register containing the name and address of the Registered Holder of this Warrant. The Registered Holder may change its address as shown on the warrant register by written notice to the Company requesting such change.

(d) Subject to the provisions of this Section 4 hereof, this Warrant and all rights hereunder are transferable, in whole or in part, upon surrender of this Warrant with a properly executed assignment (in the form of Exhibit II hereto) at the principal office of the Company (or, if another office or agency has been designated by the Company for such purpose, then at such other office or agency).

5. **No Impairment.** The Company will not, by amendment of its Amended and Restated Articles of Incorporation or Bylaws or through any reorganization, transfer of assets, consolidation, merger, dissolution, issue or sale of securities or any other voluntary action, avoid or seek to avoid the observance or performance of any of the terms of this Warrant, but will at all times in good faith assist in the carrying out of all such terms and in the taking of all such action as may be necessary or appropriate in order to protect the rights of the Registered Holder against impairment.

6. **Notices of Certain Events.** In the event the Company shall propose to:

(a) take a record of the holders of its shares of Common Stock (or other securities at the time deliverable upon the exercise of this Warrant) for the purpose of entitling or enabling them to receive any dividend or other distribution, or to receive any right to subscribe for or purchase any other securities, or to receive any other right; or

(b) request to the relevant stock exchange or securities regulatory agency that the Company's IPO be declared effective; or

(c) enter into any Merger Transaction; or

(d) undertake voluntary or involuntary dissolution, liquidation or winding-up of the Company,

then, and in each such above case, the Company will send or cause to be sent to the Registered Holder a notice specifying, as the case may be, (i) the anticipated date on which the record date is to be taken for the purpose of such dividend, distribution or right, and the amount and character of such dividend, distribution or right, (ii) the anticipated date on which the Company expects its IPO to become effective, or (iii) the anticipated date on which such "Deemed Liquidation Event" (as defined in the Amended and Restated Articles of the Company), dissolution, liquidation or winding-up is to take place, and the time, if any is to be fixed, as of which the holders of record of shares of Common Stock (or such other securities at the time deliverable upon the exercise of this Warrant) shall be entitled to exchange their shares of Common Stock (or such other securities) for securities or other property deliverable upon such reorganization, reclassification, consolidation, merger, transfer, dissolution, liquidation or winding-up. Such notice shall be sent at least ten (10) days prior to the anticipated record or effective date for the event specified in such notice.

Failure to timely provide the notice required by this Section 6 shall entitle the Registered Holder to retain the benefit of the applicable notice period notwithstanding anything to the contrary contained in any insufficient notice received by the Registered Holder. For avoidance of doubt, failure to so provide such notice in connection with a Deemed Liquidation Event shall result in the Exercise Period being extended beyond the consummation of the Deemed Liquidation Event until such notice shall have been delivered and the notice period shall have lapsed. The notice period shall begin on the date the Registered Holder actually receives a written notice containing all the information specified above.

7. **Reservation of Stock.** The Company will at all times reserve and keep available, solely for issuance and delivery upon the exercise of this Warrant, such number of shares of Common Stock and other securities, cash and/or property, as from time to time shall be issuable upon the exercise of this Warrant.

8. **Exchange or Replacement of Warrants.**

(a) Upon the surrender by the Registered Holder, properly endorsed, to the Company at the principal office of the Company, the Company will, subject to the provisions of Section 4 hereof, issue and deliver to or upon the order of the Registered Holder, at the Company's expense, a new warrant or warrants of like tenor, in the name of the Registered Holder or as the Registered Holder (upon payment by the Registered Holder of any applicable transfer taxes) may direct, calling in the aggregate on the face or faces thereof for the number of Warrant Shares (or other securities, cash and/or property) then issuable upon exercise of this Warrant.

(b) Upon receipt of evidence reasonably satisfactory to the Company of the loss, theft, destruction or mutilation of this Warrant and (in the case of loss, theft or destruction) upon delivery of an indemnity agreement (with surety if reasonably required) in an amount reasonably satisfactory to the Company, or (in the case of mutilation) upon surrender and cancellation of this Warrant, the Company will issue, in lieu thereof, a new warrant of like tenor.

9. **Notices.** All notices and other communications from the Company to the Registered Holder in connection herewith shall be mailed by certified or registered mail, postage prepaid, or sent via a reputable nationwide overnight courier service guaranteeing next business day delivery, to the address last furnished to the Company in writing by the Registered Holder. All notices and other communications from the Registered Holder to the Company in connection herewith shall be mailed by certified or registered mail, postage prepaid, or sent via a reputable nationwide overnight delivery service guaranteeing next business day delivery, to the Company at its principal office set forth below. If the Company should at any time change the location of its principal office to a place other than as set forth below, it shall give prompt written notice to the Registered Holder and thereafter all references in this Warrant to the location of its principal office at the particular time shall be as so specified in such notice. All such notices and communications shall be deemed delivered one business day after being sent via a reputable international overnight courier service guaranteeing next business day delivery.

10. **No Rights as Stockholder.** Until the exercise of this Warrant, the Registered Holder shall not have or exercise any rights by virtue hereof as a stockholder of the Company.

11. **Amendment or Waiver.** Any term of this Warrant may be amended or waived (either generally or in a particular instance and either retroactively or prospectively) with the written consent of the Company and the holders of Company Warrants representing at least a majority of the number of shares of Common Stock then subject to outstanding Company Warrants; provided, however, that if any such amendment or waiver would, by its terms, treat in a discriminatory manner a single holder (or group of holders), such amendment or waiver shall also require the written consent of the holder (or a majority in interest of the group of such holders) so adversely affected.

12. **Section Headings.** The section headings in this Warrant are for the convenience of the parties and in no way alter, modify, amend, limit or restrict the contractual obligations of the parties.

13. **Governing Law.** This Warrant will be governed by and construed in accordance with the internal laws of the State of Arizona (without reference to the conflicts of law provisions thereof).

14. **Facsimile Signatures.** This Warrant may be executed by facsimile signature.

[Signature Page to Follow]

EXECUTED as of the Date of Issuance indicated above.

Arcadia Biosciences Inc.

By: _____

Name: Eric J. Rey
Title: President & Chief Executive Officer

Address:

202 Cousteau Place, Suite 200
Davis, CA 95618
Facsimile: (801) 340 - 6500

EXHIBIT I

PURCHASE FORM

To: Arcadia Biosciences, Inc. Dated:

The undersigned, pursuant to the provisions set forth in the attached Warrant (No.), hereby irrevocably elects to purchase shares of Common Stock of Arcadia Biosciences Inc., an Arizona corporation, covered by such Warrant.

The undersigned intends that payment of the Purchase Price shall be made as:

a Cash Exercise with respect to Warrant Shares;

and/or

a Cashless Exercise with respect to Warrant Shares.

The undersigned hereby represents and warrants as follows:

(a) the undersigned is acquiring such shares of Common Stock for its own account for investment and not for resale or with a view to distribution thereof in violation of the Securities Act of 1933, as amended, and the regulations promulgated thereunder (the "Securities Act"); and

(b) the undersigned is an "accredited investor" as defined in Rule 501 of Regulation D promulgated under the Securities Act and was not organized for the purposes of acquiring the Warrant or such shares of Common Stock. The undersigned's financial condition is such that it is able to bear the risk of holding such securities for an indefinite period of time and the risk of loss of its entire investment. The undersigned has sufficient knowledge and experience in investing in companies similar to the Company so as to be able to evaluate the risks and merits of investment in the Company.

The undersigned herewith makes payment of the full Purchase Price for such shares of Common Stock at the price per share provided for in such Warrant.

Signature: _____
Name: _____
Address:

EXHIBIT II

ASSIGNMENT FORM

FOR VALUE RECEIVED, hereby sells, assigns and transfers all of the rights of the undersigned under the attached Warrant (No.) with respect to the number of shares of Common Stock of Arcadia Biosciences Inc., an Arizona corporation, covered thereby set forth below, to:

Name of Assignee	Address	No. of Shares

The undersigned hereby agrees that it will not sell, assign or transfer the right, title and interest in and to the Warrant unless applicable federal and state securities laws have been complied with.

Dated: _____

Signature: _____

By: _____

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

LICENSE AGREEMENT

THIS LICENSE AGREEMENT MADE AS OF THE **2nd** DAY OF **October 2006**

BETWEEN:

THE GOVERNORS OF THE UNIVERSITY OF ALBERTA
a corporation under the Universities Act, R.S.A. 1980, c. U-5,
Edmonton, Alberta, Canada T6G 2El, having a place of business at
Suite 4000, 10230 - Jasper Avenue, Edmonton, AB T5J 4P6
CANADA
(hereinafter known as "University")

and

ARCADIA BIOSCIENCES, INC.
a corporation incorporated under the laws of Arizona, having a place of business at
202 Cousteau Place, Suite 200, Davis, California 95616
(hereinafter known as "Arcadia")

RECITALS

WHEREAS Arcadia is engaged in the business of researching, developing and commercializing technology relating to improved performance of plants;

AND WHEREAS AgriGenomics Inc. ("AgriGenomics") was a spin-off company of the University of Alberta and was engaged in the business of developing and commercializing technology, namely, genetically engineering plants to exhibit desirable characteristics, such as nitrogen use efficiency;

AND WHEREAS under a Master Affiliation Agreement and a License Agreement (the "License Agreement"), each dated April 1, 2000, AgriGenomics was granted by the University rights to use and sublicense certain technology and to manufacture, distribute, and sell certain products on the terms and conditions set forth in the License Agreement with the University;

AND WHEREAS AgriGenomics, the University of Alberta, and Seaphire International, Inc. ("Seaphire") entered into a Sublicense Agreement ("Sublicense") dated June 14, 2002, which Sublicense contained a provision whereby the University was obligated to offer Seaphire a direct license agreement with the University if the License Agreement was terminated by the University;

AND WHEREAS Arcadia acquired all assets of Seaphire including all rights under the Sublicense;

AND WHEREAS the University terminated the License Agreement effective October 2, 2006, and Arcadia now wishes to exercise its right to acquire a license to the Technology from the University on terms and conditions no less favorable to Arcadia than those found in the License Agreement, pursuant to Section 3.6 of the Sublicense.

NOW THEREFORE this Agreement WITNESSETH that in consideration of the premises and of the mutual covenants herein set forth, the parties hereto have covenanted and agreed as follows:

Article 1 — DEFINITIONS

1.01 In this Agreement, unless a contrary intention appears, the following words and phrases shall mean:

(a) "Commencement Date" means October 2, 2006. This Agreement will be deemed to have come into force on the 2nd day of October, 2006 and shall be read and construed accordingly.

(b) "Field of Use" means the development of methods, products, and services related to agriculture, which the Parties agree shall include production, marketing, distribution and sales of plants, seed and crops, and products therefrom, the products from which are sold or used for food, feed, industrial products, therapeutic products, turf and lawn, horticulture, bioremediation and other agricultural applications;

(c) "Improvements" includes any and all improvements, variations, updates, modifications and enhancements relating to the Technology or the University Patents;

(d) "Materials" includes all seeds, plants, cell lines, vectors, plasmids, clones, micro organisms, antibodies, antigens, test plates, reagents, chemicals, compounds, physical samples, models and specimens delivered by the University to AgriGenomics including those specifically described as nitrogen-efficient plants, disease resistant plants and insect resistant plants, and all progeny and derivatives thereof;

(e) "Net Royalty Revenue" as used herein shall mean the gross revenue of Arcadia and any Related Person from sublicensing all or any part of the Technology and the University Patents, or Improvements, to another person, less the following:

(i) fees or commissions paid to any third party broker or the like in connection with the execution of the sublicense; and

(ii) that part of any tax or duty actually paid by Arcadia in connection with any sublicensing activities for which Arcadia is not eligible for a refund of the tax paid (for greater clarity, if Arcadia is eligible for a partial refund, only the portion of the tax paid that is not

eligible to be refunded shall be included in the deduction from gross revenue).

(f) "Net Sales" as used herein shall mean Arcadia's gross collected sales revenue from Products and any item, matter, product or thing containing or incorporating the Products, less the following:

(i) fees or commissions paid to any third party and reasonable trade, quantity, or cash discounts, but with respect to any of the preceding adjustments, only insofar as actually allowed or paid in connection with the sale in question;

(ii) credits or allowances, if any, given or made on account of rejection or return of defective Products; and

(iii) that part of any sales tax, excise tax, and manufactured goods duty actually paid by Arcadia with respect to any Products for which Arcadia is not eligible for a refund of the tax paid (for greater clarity, if Arcadia is eligible for a partial refund, only the portion of the tax paid that is not eligible to be refunded shall be included in the deduction from gross sales revenue).

(g) "Product" means any product or substance that consists of, or incorporates the Technology or the University Patents and "Products" means more than one Product

(h) "Related Person(s)"has the meaning assigned to it in section 251 of the Income Tax &, Stats. Can. 1970-71-72, c. 63, as amended.

(i) "Royalty Due Dates" means the last working day of June and December of each and every year during which this Agreement remains in full force and effect.

(j) "Technology" refers to University references #95036 "A method to increase seed and seedling vigour", #99038 "Identification of genes for root maggot resistance in canola" #99043 "Identification of genes for flea beetle resistance in canola" and #2000006 "Tissue-specific expression of target genes in plants" and includes any and all Materials, knowledge, know-how and/or technique or techniques invented, being invented, developed and/or acquired prior to or after the Effective Date, by the University or Arcadia based upon the University Patents and/or the above University references. The definition specifically excludes new technologies developed by the University for which separate license agreements would need to be concluded. The definition also specifically excludes technology developed by Arcadia in accordance with Paragraph 10.02 and any inventions, developments, or improvements relevant to the Field of Use developed by the

AgriGenomics and/or Dr. Allen Good pursuant to research funded in whole or in part by Arcadia;

(k) "University of Alberta Trade-marks" means any mark, trade-mark service mark, logo, insignia, seal, design or other symbol/device used by the University and associated with or referring to the University or any of its facilities.

(l) "University Patents" means the patents identified on Schedule 1, and future patents and applications filed in other jurisdictions relating to the Technology, together with re-issued patents, patents issued from a continuation application, divisional application or continuation-in part application.

Article 2 - PROPERTY RIGHTS IN AND TO THE TECHNOLOGY

2.01 Except as otherwise provided in Section 1.01(j) and Article 10, the parties hereto hereby acknowledge and agree that the University owns any and all right, title and interest in and to the Technology and the University Patents, including any and all Improvements, variations and enhancements made with respect to the Technology that are developed at the University both before and after the Commencement Date.

2.02 Arcadia shall, at the request of the University, enter into such further agreements and execute any and all documents as may be required to ensure that ownership of the Technology and the University Patents reside with the University.

2.03 The parties shall deliver to each other, in writing the details of any and all Improvements, variations, updates, modifications and enhancements relating to the Technology and the University Patents.

2.04 The University agrees to use commercially reasonable efforts to inform relevant University researchers (including University personnel, contractors, and students) of Arcadia's rights and the University's obligations under this Agreement. Arcadia acknowledges, however, that University policies governing the academic freedom of University researchers may, in some instances, make it impossible for the University to compel action or inaction of University researchers in order for the University to satisfy some of its obligations under this Agreement with respect to transfer, disclosure, license, or publication of certain aspects of the Technology that may be developed in the future. This acknowledgement by Arcadia shall not be interpreted as a waiver of the University's obligation to act in good faith in its efforts to comply with its obligations under this Agreement.

In any event, the University will use commercially reasonable efforts to inform relevant University researchers of Arcadia's interest in exploring the possibility of future business relationships with University researchers with respect to aspects of the Technology developed in the future, as well as New

Technologies.

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

Article 3 - GRANT OF LICENSE

3.01 In consideration of the royalty payments reserved herein, and the covenants on the part of Arcadia contained herein, the University hereby grants to Arcadia an exclusive, worldwide license to use and sublicense the Technology and the University Patents, including any Improvements made with respect to the Technology; and to manufacture, distribute, import, use, offer to sell and sell Products on the terms and conditions hereinafter set forth within the Field of Use (the "License").

3.02 Notwithstanding Article 3.01 herein, the parties acknowledge and agree that the University may use the Technology without charge in any manner whatsoever for research, scholarly publication (as per Article 11), educational, or other non-commercial use.

Article 4 — TERM OF LICENSE

4.01 This Agreement will terminate on the expiration of the last of the University Patents, unless earlier terminated pursuant to the provisions of this Agreement.

Article 5 — ROYALTIES

5.01 Arcadia will pay to the University [...*...] of all lump sum payments, cash consideration, non-cash consideration, and/or equity received as an initial, up-front fee in exchange for granting any sublicense. The maximum cumulative amount for all sublicenses that will be paid to the University pursuant to this Section 5.01 is [...*...].

5.02 Arcadia will make annual royalty payments to the University based on Net Sales and Net Royalty Revenue as follows:

(a) [...*...] of Arcadia's Net Sales of Products in the particular calendar year;

(b) Arcadia shall pay to the University a royalty equal to [...*...] of Arcadia's Net Royalty Revenue in the particular calendar year for all sublicenses to use all or any part of the Technology, the University Patents and Improvements owned by the University;

(c) in the event that Arcadia is required to pay royalties to any third party to use any part of the Technology, the University Patents, and/or Improvements owned by the University in order to realize Net Sales or Net Royalty Revenue from the Technology, the University Patents, and/or Improvements, the percentage of royalties paid to the University will be reduced accordingly, with a maximum reduction of [...*...] (which, for purposes of clarity, translates to a minimum royalty of [...*...] of

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

Net Sales and [...*...] of Net Royalty Revenue to be paid to the University in accordance with Sections 5.02(a)-(c)); and

(d) the parties further agree that the total of all royalties and sublicense fee sharing payments made pursuant to Sections 5.01 and 5.02 of this Agreement shall be capped at a total maximum amount of [...*...] dollars.

5.03 If Arcadia is found to be deficient in the payment of royalties to the University following an audit as described in Article 12.04, then Arcadia shall pay an interest penalty of prime plus three percent (3%) on the outstanding amount.

5.04 The royalty shall become due and payable on each respective Royalty Due Date and shall be calculated with respect to the Net Sales and Net Royalty Revenue of Arcadia in the six (6) month period immediately preceding the applicable Royalty Due Date. Arcadia shall pay such royalty within thirty (30) days of the same becoming due and payable.

5.05 All payments of royalties made by Arcadia to the University hereunder shall be made in United States dollars without any reduction or deduction of any nature or kind whatsoever, except as may be prescribed by Canadian law.

5.06 Products shall be deemed to have been sold and included in the Net Sales of Arcadia upon receipt of payment by Arcadia.

5.07 Arcadia shall have the option to buyout the license fee sharing payments and royalties specified in Sections 5.01 and 5.02 above at any time prior to December 31, 2010, for the sum of [...*...] dollars less any royalties and sublicense fee sharing payments previously paid to the University pursuant to this Article 5.

Article 6 - ROYALTY PAYMENTS AFTER TERMINATION

6.01 Arcadia shall cease to use the Technology in any manner whatsoever or to manufacture the Products within five (5) clear days from the date that this Agreement is terminated ("Effective Date of Termination"). Arcadia shall then deliver or cause to be delivered to the University an Accounting within thirty (30) clear days from the Effective Date of Termination. The Accounting will specify, in or on such terms as the University may in its sole discretion require, the inventory or stock of Products manufactured and remaining unsold (the "Unsold Products") on the Effective Date of Termination. The Unsold

Products shall be sold under the direction of the University in any or all parts of the world where Arcadia is permitted by law to sell the Unsold Products until the Unsold Products have all been sold. Arcadia will make royalty payments to the University in the same manner specified in Article 5 herein on all Unsold Products.

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

Article 7 - SUBLICENSING GRANT

7.01 Arcadia shall have the right to grant sublicenses with respect to the Technology and the University Patents, including any Improvements made with respect to the Technology; upon the general terms and conditions contained in this Agreement, but not including the specific royalty provisions hereof.

7.02 Any sublicense granted by Arcadia shall be personal to the sublicensee and shall not be assignable without the prior written consent of the University, except as in connection with the sale or transfer of all or substantially all of the sublicensee's assets (or all or substantially all of sublicensee's assets related to the sublicense), such consent not to be unreasonably withheld; provided, however, that Arcadia shall provide written notice to the University, no less frequently than annually, of any assignments by sublicensees not requiring prior written consent of the University. Such sublicenses shall contain covenants by the sublicensee to observe and perform similar terms and conditions to those in this Agreement so far as the same may be capable of observance and performance by the sublicensee, including, without limitation, the provisions for insurance and termination, but not including the specific royalty provisions hereof.

7.03 Arcadia will not market, lease, or sublicense the Technology to any Related Person or Persons without the express written consent of the University, which consent shall not be unreasonably withheld.

7.04 Arcadia shall notify the University of sublicensing activities, and shall furnish the University with a copy of each sublicense granted within thirty (30) days after execution of same.

Article 8 — ASSIGNMENT

8.01 Except as provided for in Article 7 herein, and except as in connection with the sale or transfer of al or substantially all of a party's assets (or all or substantially all of a party's assets related to this Agreement), this Agreement shall not be assigned by either party without the prior written consent of the other party, which consent shall not be unreasonably withheld.

Article 9 — PATENTS

9.01 Arcadia shall have the right to identify any other process, use or products arising out of the Technology that may be patentable and take all reasonable steps to apply for a patent in the name of the University (subject to Article 10), provided that Arcadia pays all costs of applying for, registering, and maintaining the patent in those jurisdictions in which Arcadia might designate that a patent is required.

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

9.02 In the event of the issuance of a patent arising out of the Technology, Arcadia shall have the right to become, and shall become, the licensee of the same all pursuant to the terms contained herein.

9.03 Arcadia shall assume all responsibility (including payment and management) for maintenance of any issued University Patents.

Article 10 — OWNERSHIP OF TECHNOLOGY & IMPROVEMENTS

10.01 The parties hereby acknowledge and agree that the University owns any and all right, title, and interest in and to the Technology and the University Patents, including any and all Improvements made with respect to the Technology and/or the University Patents developed at the University before the Effective Date of this Agreement or the effective date of the Sublicense.

10.02 The parties hereby acknowledge and agree that Arcadia owns any and all right, title interest in and to:

(i) any and all improvements made with respect to the Technology and/or the University Patents developed pursuant to and in the course of private research conducted by Arcadia or its agents, contractors, subcontractors or employees and conducted without the use of laboratory facilities provided by the University;

(ii) any and all improvements made with respect to the Technology and/or the University Patents developed pursuant to research sponsored in whole or in part by Arcadia and conducted without the use of laboratory facilities provided by the University;

(iii) any and all inventions, technology, developments, and/or other intellectual property developed pursuant to research sponsored in whole or in part by Arcadia and conducted without the use of laboratory facilities provided by the University; and

(iv) any and all

(A) improvements made with respect to the Technology and/or the University Patents developed pursuant to and in the course of private research conducted by Arcadia or its agents, contractors, subcontractors or employees

(B) improvements made with respect to the Technology and/or the University Patents developed pursuant to research sponsored in whole or in part by Arcadia and conducted by AgriGenomics without the use of laboratory facilities provided by the University; and

(C) inventions, technology, developments, and/or other intellectual property developed pursuant to research sponsored by Arcadia, other than Improvements owned by the University under Section 10.01.

10.03 Arcadia shall, at the request of the University, enter into such further agreements and execute any and all documents as may be required to ensure that ownership of the Technology and the University Patents, including applicable Improvements, as set out in Section 10.01, reside with the University.

10.04 The University shall, at the request of Arcadia, enter into such further agreements and execute any and all documents as may be required to ensure that ownership of any and all Improvements and the University Patents as set out in Section 10.02 above, reside with Arcadia.

10.05 The University hereby releases any claim to any claim of right, title, or other forms of ownership to any improvements owned by Arcadia as defined in Section 10.02.

Article 11 - PUBLICATION AND CONFIDENTIALITY

11.01 The parties hereto acknowledge and agree that they will treat the Technology as confidential and that they will not disclose or communicate or cause to be disclosed or communicated the Technology to any person or organization without the appropriate non-disclosure agreements, except as permitted under a sublicense.

11.02 The parties covenant and agree that they will initiate and maintain an appropriate internal program limiting the internal distribution of the Technology to their officers, servants or agents and to take the appropriate non-disclosure agreements from persons who may have access to the Technology.

11.03 Notwithstanding anything contained in Sections 11.01, 11.02 or elsewhere in this Agreement, the parties acknowledge that as the University is a public educational institution, it cannot be exposed to claims for damages that may result from a breach of this Agreement. Arcadia, therefore, covenants and agrees that the University shall not be liable to Arcadia for any loss or damage, whether direct, indirect, consequential, incidental, special or any other similar or like damages, that may arise or do arise from the breach of this Agreement by the University or any of its servants, agents, students or faculty.

11.04 The University shall be permitted to present at symposia, national or regional professional meetings, and to publish in journals or other publications accounts of its research relating to the Technology, provided that Arcadia shall have been

furnished copies of any proposed disclosure at least sixty (60) days in advance of the presentation or publication date and does not within forty-five (45) days after receipt of the proposed disclosure object to such presentation or publication. In the event objection is made, such disclosure shall not be made for a period of three (3) months after the date Arcadia has made said objection. The University shall co-operate in all reasonable respects in making revisions to any proposed disclosure if considered by Arcadia to be objectionable. After the three (3) month period has elapsed, the University shall be free to present and/or publish said proposed disclosure.

Article 12 - ACCOUNTING RECORDS

12.01 Arcadia shall maintain at its principal place of business, or such other place as may be most convenient, separate accounts and reasonable records of business done pursuant to this Agreement, such accounts and records to be in sufficient detail to enable proper returns to be made under this Agreement, and Arcadia shall require sublicensees to keep similar accounts.

12.02 Arcadia shall deliver to the University on the date thirty (30) days after the Royalty Due Date, together with the royalty payable thereunder, an accounting statement (the "Accounting") setting out in detail how Net Sales and Net Royalty Revenue were determined.

12.03 The calculation of royalties shall be carried out in accordance with generally accepted accounting principles in effect in the United States, including, without limitation, those approved or recommended from time to time by the American Institute of Certified Public Accountants, or any successor institute, applied on a consistent basis.

12.04 Arcadia shall retain the accounts and records referred to in Article 12.01 above for at least three (3) years after the date upon which they were made and shall permit any duly authorized representative of the University to inspect such accounts and records during normal business hours of Arcadia at the University's expense. Arcadia shall furnish such reasonable evidence as such representative may deem necessary to verify the Accounting and will permit such representative to make copies of or extracts from such accounts, records and agreements at the University's expense.

12.05 During the term of this Agreement and thereafter, all information provided to the University or its representatives pursuant to this Article shall remain confidential and be treated as such by the University, and the University will not make same available to any other person except as may be required by law.

12.06 Notwithstanding the termination of this Agreement, this Article 12 shall remain in full force and effect until:

(a) all payments of royalties required to be made by Arcadia to the University under this Agreement have been made by Arcadia to the University; and

(b) any other claim or claims of any nature or kind whatsoever of the University against Arcadia have been settled.

Article 13 - PRODUCTION AND MARKETING

13.01 Arcadia shall use its best efforts to promote, market, and sell the Products and utilize the Technology and to meet or cause to be met the world market demand for the Products and the utilization of the Technology, either directly or through its sublicensees.

13.02 Arcadia shall not use any of the University of Alberta Trade-marks or make reference to the University or its name in any advertising publicity whatsoever, without the prior written consent of the University.

13.03 In the event that the University is of the view that Arcadia is in breach of the covenant contained in this Article 13, the University shall notify Arcadia and the parties hereto shall appoint an independent evaluator (the "Evaluator"), mutually acceptable to both parties, to review the efforts made by Arcadia with respect to the promotion, marketing and sale of the Products and sublicensing of the Technology (the "Evaluation").

13.04 In the event that the parties cannot agree on the Evaluator, the appointing authority shall be the Alberta International Commercial Arbitration Centre. Evaluations shall be limited to one (1) per calendar year.

13.05 If the Evaluator determines that Arcadia is in breach of the covenant contained in this Article 13, then the University shall have the right to terminate this Agreement as provided in Article 17 herein. If the Evaluator determines that Arcadia is not in breach of the covenant contained in this Article 13, then the University shall not terminate this Agreement for breach of this Article.

13.06 The cost of an evaluation hereunder shall be borne fifty percent (50%) by Arcadia and fifty percent (50%) by the University.

Article 14 — INSURANCE

14.01 One (1) month prior to the first sale of a Product, Arcadia will give notice to the University of the terms and amount of the public liability and product liability insurance which it has placed in respect of the same, which in no case shall be less than the insurance which a reasonable and prudent businessmen carrying on a similar line of business would acquire. This insurance shall be placed with a reputable and financially secure insurance carrier, shall include the University, the Board of Governors, its faculty, officers, employees, students and agents as additional insureds, and shall provide primary coverage with respect to the

activities contemplated by this Agreement. Such policy shall include severability of interest and cross-liability clauses and shall provide that the policy shall not be canceled or materially altered except upon at least thirty (30) days' written notice to the University. The University shall have the right to require reasonable amendments to the terms or the amount of coverage contained in the policy. Failing the parties agreeing on the appropriate terms or the amount of coverage, then the matter shall be determined by arbitration as provided for herein. Arcadia shall provide the University with certificates of insurance evidencing such coverage seven days before commencement of sales of any Product and Arcadia covenants not to sell any Product before such certificate is provided and approved by the University.

Article 15 - DISCLAIMER OF WARRANTY

15.01 The University makes no representations or warranties, either express or implied, with respect to the Technology or Products and specifically disclaims any implied warranty of merchantability and fitness for a particular purpose. The University shall in no event be liable for any loss of profits, be they direct, consequential, incidental, or special or other similar or like damages arising from any defect, error or failure to perform with respect to the Technology or Products, even if the University has been advised of the possibility of such damages.

15.02 IN NO EVENT SHALL ANY PARTY BE LIABLE FOR INDIRECT, INCIDENTAL, SPECIAL, CONSEQUENTIAL, EXEMPLARY OR PUNITIVE DAMAGES FOR ANY BREACH OF ITS OBLIGATIONS OR WARRANTIES, EXPRESS OR IMPLIED RESULTING FROM THIS AGREEMENT (INCLUDING LOSS OF PROFITS OR BUSINESS, LOST OPPORTUNITY OR LOSS OF BUSINESS REPUTATION), EVEN IF THE PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

15.03 Nothing in this Agreement shall be construed as:

(a) a warranty or representation by the University as to the validity or scope of the License granted pursuant to this Agreement,

(b) a warranty or representation by the University that anything made, used, sold or otherwise disposed of under the License granted in this Agreement is or will be free from infringement of patents, copyrights, trade-marks, registered design or other intellectual property rights,

(c) an obligation by the University to bring or prosecute actions or suits against third parties for infringement of patents, copyrights, trade-marks, registered design or other intellectual property or contractual rights, or

(d) the conferring by the University of the right to use in advertising or publicity the UNIVERSITY OF ALBERTA Trade-marks.

15.04 Notwithstanding the foregoing, the University stipulates that the License granted herein is granted by the University in good faith and in reliance on the

University's belief that the University is the rightful assignee and owner of the University Patents.

Article 16 — TERMINATION

16.01 Subject to Article 16.02, the University may, at its option and in its sole discretion, terminate this Agreement on the happening of any one or more of the following events forthwith delivering notice in writing to this effect to Arcadia:

(a) if any proceeding under the Bankruptcy Act of Canada, or any other statute of similar purport is commenced by or against Arcadia which results in Arcadia being adjudged bankrupt, (such proceedings shall not include a general proposal to creditors provided such proposal is not made under the provisions of the Bankruptcy Act of Canada or any other statute of similar purport), or
(b) if any execution, sequestration, or any another process of any court becomes enforceable against Arcadia or if any such process is levied on the rights under this Agreement or upon any of the monies due to the University and is not released or satisfied by Arcadia within thirty (30) days thereafter,
(c) or if any resolution is passed or order made or other steps taken for the winding up, liquidation or other termination of the existence of Arcadia, or
(d) if Arcadia grants a security interest in the Technology, other than to the University by operation of this Agreement, or
(e) if Arcadia ceases or threatens to cease to carry on its business.

16.02 Other than as set out in Article 16.01 herein, if either party shall be in default under or shall fail to comply with the terms of this Agreement and:

(a) if such default is reasonably curable within ninety (90) days after receipt of notice of such default and such default or failure to comply is not cured within ninety (90) days after receipt of written notice thereof, or
(b) if such default is not reasonably curable within ninety (90) days after receipt of written notice thereof, and such default or failure to comply is not cured within such further reasonable period of time as may be necessary for the curing of such default or failure to comply,
(c) then the non-defaulting party shall have the right to terminate this Agreement by written notice to that effect.

16.03 If this Agreement is terminated by the University pursuant to Article 16.01 or 16.02 herein, Arcadia shall make royalty payments to the University in the manner specified in Article 5 herein, and the University may proceed to enforce payment of all debts owed to the University and to exercise any or all of the rights and remedies contained herein or otherwise available to the University by law or in equity. The University shall have the right to enforce one or more remedies

successively or concurrently in accordance with applicable law and the University expressly retains all rights and remedies including all of the rights it may have under the Personal Property Security Act. Without restricting the generality of the foregoing, the University may immediately and without notice enter Arcadia's premises and repossess any or all of the Technology, demand payment of any deficiency after the sale of the Technology and sue Arcadia for any deficiency, and appoint by instrument in writing a receiver of Arcadia, and remove or replace such receiver from time to time or institute proceedings in any court of competent jurisdiction for the appointment of a receiver, Any such receiver appointed by the University so far as responsibility for his acts will be deemed to be the agent of Arcadia. All charges or expenses incurred by the University in the enforcement of its rights or remedies against Arcadia including without limitation the University's solicitors fees and disbursements on an indemnity basis and the costs of any receiver appointed pursuant to this article may, at the option of the University be deducted from any proceeds of disposition of the Technology before payment to Arcadia or any other entitled party to be added to and become part of the obligations owed by Arcadia to the University.

Article 17 — INDEMNITY

17.01 Arcadia hereby indemnifies, holds harmless and defends the University, its officers, employees and agents against any and all claims arising out of the exercise of any rights under this Agreement including, without limiting the generality of the foregoing, against any damages or losses, consequential or otherwise, arising from or out of the use of Technology or Products licensed under this Agreement by Arcadia or its sublicensees, or their customers or end-users howsoever the same may arise.

17.02 Arcadia covenants and agrees that it has the expertise necessary to handle the Materials and Technology with care and without danger to Arcadia, its employees, agents, or the public. Arcadia covenants that it will not accept delivery of the Materials or Technology until it has requested and received from the University all necessary information and advice to ensure that it is capable of handling the Materials and Technology in a safe and prudent manner in accordance with this Article 17.02.

17.03 Arcadia covenants and agrees that it will comply with all laws, regulations and ordinances, whether Federal, Provincial, Municipal or otherwise with respect to the Materials, the Technology and/or this Agreement.

17.04 Arcadia shall, upon receiving at least ten (10) business days' notice from the University, permit any duly authorized representative of the University during normal business hours and at the University's sole risk and expense to enter upon and into any premises occupied by Arcadia for the purpose of ascertaining whether or not the provisions of this Agreement have been, are being, or will be complied with by Arcadia.

Article 18 - INFRINGEMENTS

18.01 Upon learning of any possible infringement by any third party of any claim involving the University Patents, each party shall promptly notify the other, in writing, with details of the possible infringement. At its sole discretion, the University will take any steps necessary, at its expense, to eliminate such infringement, including the commencement of legal action, if necessary. The University may also, in its sole discretion, defend the University Patents against any claims of invalidity.

18.02 In the event that the University fails to take action to eliminate infringement by any third party or is unable to enforce its rights against such a third party, Arcadia may elect to pay the University for the cost of taking such action to enforce its rights or Arcadia may take direct action to enforce the University Patents. If Arcadia pays the costs for enforcing the University Patents or elects to take direct action in enforcing the University Patents, Arcadia may recover fifty percent (50%) of such costs by crediting them against any sublicense fees and royalties owed to the University. In the event Arcadia takes direct action to enforce the University Patents and is awarded money damages, costs, and/or attorneys' fees, Arcadia shall reimburse the University for all costs previously credited against sublicense fees and royalties, such reimbursement not to exceed the total amount of the monetary award. Arcadia shall be entitled to all money damages, costs, and/or attorneys' fees awarded to it that exceed the total costs previously credited against sublicense fees and royalties.

18.03 The parties agree that if a party brings an infringement suit pursuant to this Section, the other parties shall join as plaintiffs, if requested, and shall cooperate and assist in the preparation and prosecution of the suit.

Article 19 — INDEPENDENCE

19.01 Nothing contained herein shall be deemed or construed to create between the parties hereto a partnership or joint venture. No party shall have the authority to act on behalf of any other party, or to commit any other party in any manner or cause whatsoever or to use any other party's name in any way not specifically authorized by this Agreement. No party shall be liable for any act, omission, representation, obligation or debt of any other party, even if informed of such act, omission, representation, obligation or debt.

Article 20 - GOVERNING LAW AND ARBITRATION

20.01 This Agreement shall be governed by and construed in accordance with the laws of the Province of Alberta and the laws of Canada in force therein.

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

15

20.02 Except as otherwise specified herein, should any dispute arise between the parties concerning this Agreement, the parties agree to first attempt to resolve the dispute in good faith. If within sixty (60) days of one party providing written notice of such dispute to the other party such dispute is not resolved as aforesaid, then the dispute shall immediately thereafter be referred for resolution to binding arbitration by a single arbitrator under the rules of the *Arbitration Act* (Alberta) which shall be held at a neutral site in Calgary, Alberta and in accordance with the following rules:

(a) The arbitration shall be by one arbitrator and the parties will meet in an attempt in good faith to appoint a sole arbitrator. If they are unable within ten days of the first written demand for a meeting for that purpose to agree upon a sole arbitrator, then the arbitrator shall be appointed pursuant to the rules of *Arbitration Act* (Alberta);

(b) The arbitrator or arbitrators selected to act hereunder will be qualified by education and training to pass upon the particular question in dispute. The sole arbitrator chosen in accordance with the above procedure will, subject to the completion of any discovery permitted under the following paragraph, proceed immediately to hear and determine the matter or matters in dispute;

(c) As soon as practicable after the arbitrator has been duly selected, the party demanding arbitration shall deliver to the other parties and the arbitrator, particulars of its dispute, together with any documents or evidence relied upon by the party demanding arbitration. Within twenty (20) days of receipt of the particulars of the party demanding arbitration, the other party shall deliver the particulars of its response to the party demanding arbitration and the arbitrator, together with any documents or evidence relied upon by the relied upon by the other party;

(d) The sole arbitrator may in his discretion conduct, or will at the written request of any party to the dispute, permit the parties to conduct, pre-arbitration discovery in a manner consistent with the rules for civil actions brought in a Court in Calgary, Alberta;

(e) The arbitrator may in his or her discretion hold a hearing, and shall do so at the written request of any party to the dispute, with respect to preliminary or other issues. Where no hearing is held, the arbitrator shall consider only the particulars and the documentary evidence submitted by the parties;

(f) The arbitrator shall have all the powers conferred upon him by the rules of the *Arbitration Act* (Alberta) including, without limitation, the power to obtain the assistance, advice or opinion of any chartered accountant, lawyer, appraiser, valuator or other expert whom he thinks necessary and qualified;

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

(g) The decision of the sole arbitrator will be in writing and signed by the sole arbitrator and will be final and binding upon all parties to any matter or matters so submitted to arbitration and the parties will perform the terms and conditions thereof. No party will be deemed to be in default of any matter being arbitrated until ten (10) days after a copy of the decision of the arbitrator is delivered to each party;

(h) The decision of the arbitrator will be made within forty-five (45) days after his appointment or within twenty (20) days after the completion of any discovery conducted with respect thereto, whichever is later. In the event the sole arbitrator fails to make a decision within sixty (60) days after he was appointed or within forty (40) days after the completion of any discovery, whichever is later, then any of the parties concerned may elect to have a new sole arbitrator chosen as if none had been selected; and

(i) Unless the arbitrator otherwise directs, each party to the dispute shall bear its own costs and expenses thereof and the unsuccessful party shall bear the costs of the arbitrator and of any experts appointed by the arbitrator.

20.03 Section 20.02 of this Article shall not prevent a party hereto from applying to a court of competent jurisdiction for interim protection such as, by way of example, an interim injunction.

Article 21 — INUREMENT

21.01 Subject to the limitations herein before expressed, this Agreement shall inure to the benefit of and be binding upon the parties, and their respective successors and permitted assigns.

Article 22 — HEADINGS

22.01 Marginal headings as used in this Agreement are for the convenience of reference only and do not form a part of this Agreement and are not be used in the interpretation hereof.

Article 23 - SURVIVAL OF COVENANTS

23.01 The terms and provisions, covenants and conditions contained in this Agreement which by the terms hereof require their performance by the parties hereto after the expiration or termination of this Agreement shall be and remain in force notwithstanding such expiration or other termination of this Agreement for any reason whatsoever.

Article 24 - NON-WAIVER

24.01 No condoning, excusing or overlooking by any party of any default, breach or nonobservance by any other party at any time or times in respect of any

covenants, provisos, or conditions of this Agreement shall operate as a waiver of such party's rights under this Agreement in respect of any continuing or subsequent default, breach or non-observance, so as to defeat in any way the rights of such party in respect of any such continuing or subsequent default or breach and no waiver shall be inferred from or implied by anything done or omitted by such party, save only an express waiver in writing.

24.02 No exercise of a specific right or remedy by any party precludes it from or prejudices it in exercising another right or pursuing another remedy or maintaining an action to which it may otherwise be entitled either at law or in equity.

Article 25 - SEVERABILITY

25.01 In the event that any part, section, clause, paragraph or subparagraph of this Agreement shall be held to be indefinite, invalid, illegal or otherwise violable or unenforceable, the entire agreement shall not fail on account thereof, and the balance of the Agreement shall continue in full force and effect.

Article 26 - NOTICES

26.01 Every notice, consent or other communication provided for in this Agreement or arising in connection therewith shall be in writing and shall be mailed, delivered or sent via facsimile to the parties to which it is to be given as follows:

if to the University, at

University of Alberta, c/o TEC Edmonton
Suite 4000, 10230 - Jasper Avenue,
Edmonton, AB
T5J 4P6
Facsimile: (780) 492-7876
Attention: Director, Industry Liaison Office

if to Arcadia, at

202 Cousteau Place, Suite 200
Davis, California, United States of America

95616
Facsimile: (530) 756-7027
Attention: Eric Rey

26.02 Each party may change its mailing, delivering or facsimile address by giving written notice to each other party to that effect.

26.03 Every such notice, consent or other communication delivered shall be deemed to have been given and received on the day such communication was delivered and

every notice, consent or other communication transmitted by facsimile shall be deemed to have been given and received on the day such communication was transmitted by facsimile, if transmitted prior to 5:00pm (local time of the recipient) on such day, and otherwise, on the day following the date of transmission, provided however that if such day falls on a weekend or statutory holiday, then the notice, consent or other communication shall be deemed to have been given and received on the next business day following such day. Every such communication mailed by prepaid registered post in an envelope addressed to the party to whom the same is directed, will be deemed to have been given to and received by the addressee on the fifteenth (15th) business day following the mailing; except where there exists a labour strike or disturbance the result of which is the interference of normal mail deliveries, in which case every notice, consent, or other communication provided for in this Agreement or arising in connection therewith will be in writing and will be delivered to the parties at the above address.

Article 27 — GENERAL

27.01 This Agreement sets forth the entire understanding between the parties and no modifications hereof shall be binding unless executed in writing by the parties hereto.

27.02 Time shall be of the essence of this Agreement.

27.03 Whenever the singular or masculine or neuter is used throughout this Agreement the same shall be construed as meaning the plural or feminine or body corporate when the context of the parties hereto may require.

27.04 This Agreement may be executed in one or more counterparts with the same effect as if the parties all signed the same document. All counterparts will be considered to be originals and together and will constitute one instrument. This Agreement may be executed by facsimile and a facsimile copy of this document shall constitute sufficient evidence of the execution of the Agreement.

[SIGNATURE PAGE FOLLOWS]

IN WITNESS WHEREOF the parties hereto have executed and delivered this Agreement in duplicate at the date set forth above.

ON BEHALF OF THE GOVERNORS OF THE UNIVERSITY OF ALBERTA

Per:	/s/ Pamela Freeman	Date:	September 5, 2008
Name:	Pamela Freeman	Title:	Acting CEO, TEC Edmonton

ON BEHALF OF ARCADIA BIOSCIENCES, INC.

Per:	/s/ Eric J. Rey	Date:	September 5, 2008
Name:	Eric J. Rey	Title:	President

Schedule 1

1. **Plants Having Enhanced Nitrogen Assimilation/Metabolism**

Inventors: **Allen G. Good**, Edmonton, Alberta, Canada
Virginia L. Stroeher, Calgary, Alberta, Canada
Douglas G. Muench, Pullman, Washington, US

APPLICATIONS:			**Filed**
Priority:	US	08/599,968	February 14, 1996 (1)
	CAN	2,169,502	February 14, 1996 (1), (2), (3)
Subsequent:	PCT	CA97/00100	February 14, 1997 (1)
	CON	09/568,221	May 9, 2000(3)
	CON	10/321,718	December 17, 2002(3)

ISSUED PATENTS:			
US	6,084,153	July 4, 2000	Priority: February 14, 1996
GB	2,325,232	November 29, 2000	Priority: February 14, 1996
GB	2,349,886	December 27, 2000	Priority: February 14, 1996
AU	727264	December 7, 2000	Priority: February 14, 1996
AU	760622	September 4, 2003	Priority: February 14, 1996

1. Prepared and submitted by Bennett, Jones, Verchere (Edmonton, Canada).
2. Canadian patent counsel is now Gowlings, Lafleur, Henderson (Ottawa, Canada)
3. Handled by Morrison & Foerster (San Francisco, CA USA).

2. **Tissue-Specific Expression of Target Genes**

Inventor: **Allen G. Good**, Edmonton, Alberta, Canada

APPLICATIONS:		**Filed**
US 09/493,803		January 28, 2000 (1)
(CIP of US 08/599,968 — Priority: February 14, 1996)		
PCT	CA01/00066	January 29, 2001 (2)
BR	P101079000	January 29, 2001(3)
CA	2,398,510	January 29, 2001(2),(3)
EP	1250445	January 29, 2001(3)
AU	782263	January 29, 2001(3)

1. Prepared and submitted by Lahive and Cockfield (Boston, MA USA). Application now abandoned.
2. Prepared and submitted by Gowlings, Lafleur, Henderson (Ottawa, Canada)
3. Priority date: January 28, 2000. Submitted by Morrison & Foerster (San Francisco, CA USA).

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

3. Plants with Enhanced Levels of Nitrogen Utilization Proteins in their Root Epidermis and Uses Thereof

Inventor: **Allen G. Good**, Edmonton, Alberta, Canada

APPLICATIONS:	**Filed**
US 10/756,213	January 12, 2004(1)

(CIP of US 10/321,718 (pending), which is a CON of US 09/568,221 (now abandoned), which is a CIP of US 09/493,803 (now abandoned), which is a CIP of US 08/599,968 — Priority: February 14, 1996)

1. Prepared and submitted by Morrison & Foerster (San Francisco, CA USA)

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

INTELLECTUAL PROPERTY LICENSE AGREEMENT

This Intellectual Property License Agreement ("Agreement"), effective *nunc pro tunc* as of January 1, 2003 (the "Effective Date"), is entered into by and between Arcadia Biosciences, Inc. an Arizona corporation with a principal office at 202 Cousteau Place, Suite 200, Davis, CA 95616 ("ARCADIA") and Blue Horse Labs, Inc., an Arizona corporation with a principal office at […*…] ("BLUE HORSE"). The parties to this Agreement are collectively referred to as the "Parties" and individually as a "Party".

WHEREAS, BLUE HORSE and ARCADIA entered into that certain Sponsored Research and Development Agreement (the "R&D Agreement"), having an effective date of January 1, 2003, which agreement is incorporated herein by reference;

WHEREAS, pursuant to the R&D Agreement, BLUE HORSE funded the development of certain intellectual property by ARCADIA and became the sole owner of such intellectual property (the "Blue Horse IP") that it funded; and

WHEREAS, BLUE HORSE desires to grant and ARCADIA desires to obtain a license to the Blue Horse IP in accordance with the terms and conditions of this Agreement;

NOW, THEREFORE, in consideration of the mutual covenants and agreements hereinafter set forth, and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Parties hereby agree as follows:

AGREEMENT

1. DEFINITIONS.

Terms in this Agreement defined in the singular have the same meanings when used in the plural and vice versa. For purposes of this Agreement, the following words and phrases shall have the following meanings:

1.1. "Affiliate" means with respect to any person or entity, any other person or entity that directly or indirectly controls, is controlled by or is under common control with such person or entity. A person or entity shall be deemed to be "controlled" by any other person or entity if such other person or entity (i) possesses, directly or indirectly, power to direct or cause the direction of the management and policies of such person or entity whether by contract or otherwise, (ii) has direct or indirect ownership of at least fifty percent (50%) (in the aggregate) of the voting power of all outstanding shares entitled to vote at a general election of directors of the person or entity, or (iii) has direct or indirect ownership of at least fifty percent (50%) of the equity interests in a partnership or a limited liability company. Notwithstanding the foregoing, for purposes of this Agreement, "Affiliates" shall not include BLUE HORSE.

1.2. "Field of Use" as used herein shall mean development and commercialization of methods, products, and services related to plants, which shall include, but not be limited to, production of plants, seed, crops, and products therefrom.

1.3. "Blue Horse IP" as used herein shall mean the intellectual property listed in Appendix A, which is the subject of this Agreement, the development of which was funded by BLUE HORSE pursuant to the R&D Agreement.

1.4. "Product" means any product, good, or service, the use, manufacture, sale, offer for sale, import, or export of which Product would, absent the licenses granted hereunder, infringe an issued and unexpired claim of the Blue Horse IP that has not been held unenforceable or invalid by a court or other governmental agency of competent jurisdiction in an unappealed or unappealable decision and that has not been disclaimed or admitted to be invalid or unenforceable through reissue or otherwise.

1.5. "Net Revenues" means the gross amount invoiced by ARCADIA or its Affiliates for the sale or other disposition of Products during the applicable period in arm's length transactions after deduction of the following items, provided and to the extent such items are actually incurred and do not exceed reasonable and customary amounts in each market in which such sales or other dispositions occurred: (i) commissions paid to non-Affiliated third parties; (ii) royalties paid for licenses necessary to develop and/or commercialize Products; (iii) trade and quantity discounts and rebates; (iv) credits or allowances made for rejection or return of previously sold Products; (v) any tax or government charge levied on the sale, such as value added tax (but not including income tax); (vi) any charges for freight or insurance, and (vii) bad debts and/or uncollectible amounts, provided that all such amounts have been formally designated as such in accordance with generally accepted accounting principles (GAAP), and further provided that such allowance shall not be applicable in the event and to the extent ARCADIA ultimately collects any such designated amounts. In the event that the Products are sold or otherwise transferred to an Affiliate or a third party for a price lower than if they had been sold to a third party in an arm's length transaction ("fair market value"), then Net Revenues shall be the fair market value of the Products to an end-user of the Products to whom ARCADIA customarily in the ordinary course of its business sells Products. Net Revenues also shall include all amounts received by ARCADIA in connection with any license of all or part of the Blue Horse IP, including, without limitation, license fees, license maintenance fees, and milestone payments, but not including equity consideration or reimbursements for actual research and development costs incurred by ARCADIA.

1.6. "Term" has the meaning provided in Section 3.1.

2. GRANT OF LICENSE; ELECTION TO PURCHASE.

2.1. Exclusive License Grant. Subject to the terms and conditions contained in this Agreement, BLUE HORSE grants to ARCADIA and its Affiliates, and ARCADIA accepts for itself and on behalf of its Affiliates, an exclusive, worldwide, sublicensable license under the Blue Horse IP to (i) research, develop, make, have made, use, have used, import, export, distribute, sell, have sold, offer for sale, and otherwise exploit Products in the Field of Use for commercial and/or research purposes, and (ii) otherwise utilize the Blue Horse IP for any reasonable commercial and/or research purposes (the "Exclusive ARCADIA License").

2.2. Sublicenses. ARCADIA and its Affiliates are entitled to grant sublicenses under the Exclusive ARCADIA License.

2.3. Election to Purchase Intellectual Property Rights.

2.3.1. At any time during the Term of this Agreement, ARCADIA shall have the right to purchase all or part of BLUE HORSE's rights under this Agreement including (i) all rights of BLUE HORSE in the Blue Horse IP, and (ii) BLUE HORSE's right to receive a share of Net Revenues. ARCADIA may exercise this right by providing BLUE HORSE with a Notice of Election. The purchase price of BLUE HORSE's rights shall be the fair market value of that portion of the Blue Horse IP proposed to be purchased as determined by averaging the appraised value of that portion of the Blue Horse IP as determined in good faith by an appraiser retained by ARCADIA and an appraiser retained by BLUE HORSE. Each Party shall bear the cost associated with its respective appraiser. The payment of fair market value and documentation of any required assignment of rights (and recordation thereof, if applicable, with the United States Patent and Trademark Office) shall occur within ninety (90) days of ARCADIA's Notice of Election unless otherwise mutually agreed in writing by the Parties. In determining the purchase price of BLUE HORSE's rights under this Agreement, the value of BLUE HORSE's right to receive a share of Net Revenues shall be equal to the fair market value of BLUE HORSE's right to receive the stated share of Net Revenues as of the date of ARCADIA's Notice of Election.

2.3.2. In the event that BLUE HORSE ceases to do business or otherwise terminates its business operations, BLUE HORSE shall promptly provide ARCADIA with written notice of the same, and ARCADIA shall have thirty (30) days from receipt of such written notice in which to exercise a first right of refusal to purchase all or part of BLUE HORSE's rights under this Agreement, including (i) all rights of BLUE HORSE in the Blue Horse IP, and (ii) BLUE HORSE's right to receive a share of Net Revenues. ARCADIA may exercise this right by notifying BLUE HORSE in writing of its election ("Notice of Election"). Where ARCADIA's Notice of Election has not been received by BLUE HORSE within thirty (30) days of ARCADIA's receipt of BLUE HORSE's written notification, ARCADIA shall be deemed to have waived its purchase rights. The purchase price of BLUE HORSE's rights shall be the fair market value of that portion of the Blue Horse IP proposed to be purchased as determined by averaging the appraised value of that portion of the Blue Horse IP as determined in good faith by an appraiser retained by ARCADIA and an appraiser retained by BLUE HORSE. Each Party shall bear the cost associated with its respective appraiser. The payment of fair market value and documentation of any required assignment of rights (and recordation thereof, if applicable, with the United States Patent and Trademark Office) shall occur within ninety (90) days of ARCADIA's Notice of Election unless otherwise mutually agreed in writing by the Parties. In determining the purchase price of BLUE HORSE's rights under this Agreement, the value of BLUE HORSE's right to receive a share of Net Revenues shall be the fair market value of BLUE HORSE's right to receive the stated share of Net Revenues as of the date of ARCADIA's Notice of Election. Where ARCADIA elects not to purchase BLUE HORSE's rights herein, and any rights of BLUE HORSE in this Agreement and/or the Blue Horse IP are transferred to a third party as a result of the termination or cessation of business of BLUE HORSE, this Agreement shall not terminate and the successor in interest to BLUE HORSE shall automatically succeed to all BLUE HORSE's rights and obligations hereunder without change in the terms or other provisions of this Agreement.

TERM; TERMINATION.

3.1. Term. The Agreement will begin on the Effective Date and will expire concurrently with the last to expire patent contained within the Blue Horse IP (the "Term").

3.2. Early Termination. Either Party may, upon notice to the other, terminate this Agreement if the other Party materially breaches this Agreement and fails to cure such breach within ninety (90) days after receiving written notice thereof from the non-breaching Party. For the avoidance of doubt, termination of this Agreement shall be effective only if (i) the non-breaching Party provides notice of breach to the other Party, (ii) such breach is not cured within ninety (90) days, and (iii) the non-breaching Party then provides the other Party notice of termination upon expiration of such cure period. The effective date of termination shall be the date of receipt of such notice of termination by the breaching Party. If the default is cured during such period, the notice will have no force or effect. The Parties acknowledge that termination of this Agreement for breach shall terminate any licenses granted hereunder to ARCADIA and its Affiliates in the Blue Horse IP, as well as any and all sublicenses thereto.

4. PAYMENTS; REPORTING; RECORDS.

4.1. Revenue Sharing. In consideration of the Exclusive ARCADIA License pursuant to which the Blue Horse IP is herein licensed by BLUE HORSE to ARCADIA, ARCADIA agrees to pay BLUE HORSE a royalty of **[…*…]** percent **[…*…]** of the total Net Revenues received by ARCADIA and/or its Affiliates during the Term.

4.2. Form of Payment. For any payment due to BLUE HORSE in accordance with Section 4.1, BLUE HORSE may, in its sole discretion and upon ARCADIA's written request, elect to accept ARCADIA stock in lieu of a cash payment. If BLUE HORSE so elects, then, subject to compliance with all applicable laws (including all applicable federal and state securities laws), ARCADIA shall issue to BLUE HORSE a number of shares of Arcadia Capital Stock having a then-current fair market value equivalent to the cash amount due pursuant to Section 4.1. The Capital Stock so issued shall be Preferred Stock of ARCADIA having terms, rights, and preferences at least equal to any outstanding series or class of ARCADIA Preferred Stock or, if no ARCADIA Preferred Stock is outstanding, shall be Common Stock of ARCADIA. In any event, the ARCADIA Capital Stock to be issued shall be valued by averaging the appraised value of the shares to be issued as determined in good faith by an appraiser retained by ARCADIA and an appraiser retained by BLUE HORSE, each to bear the cost of its appraiser.

4.3. Reporting. Within thirty (60) days of the end of the applicable annual period (based on a calendar year) following the first commercial sale of a Product and within thirty (60) days after the end of each annual period thereafter, ARCADIA shall make a written report to BLUE HORSE setting forth that information, including that of Affiliates and sublicensees, necessary to permit BLUE HORSE to calculate and confirm the revenue share payment due BLUE

HORSE, even if no payment is due. At the time each report is made, ARCADIA shall pay to BLUE HORSE or any Affiliate of BLUE HORSE as BLUE HORSE may direct, the amounts shown by such report to be payable hereunder. Payments due on sales in foreign

currency shall be calculated in United States dollars on the basis of the exchange rate in effect for purchase of dollars at Chase Manhattan Bank, New York, New York, on the last business day of the last-preceding December.

4.4. Books and Records for Payments. ARCADIA shall keep, and shall cause its Affiliates to keep, books and records in such reasonable detail as will permit the reports provided for in this Section to be made and the revenue share payable hereunder to be determined. ARCADIA further agrees to permit its and its Affiliates' books and records to be inspected and audited from time to time (but not more often than once annually) during reasonable business hours by an independent auditor, designated by BLUE HORSE and approved by ARCADIA, which approval will not be unreasonably withheld, to the extent necessary to verify the reports provided for in this Section; provided, however, that such auditor shall indicate to BLUE HORSE only whether the reports and revenue share paid are correct, and if not, the reason why not. In the event that such an audit results in additional revenue share being owed to BLUE HORSE, such amount shall be paid within twenty (20) days from written notice of deficiency along with interest calculated as from the date the correct payment was due to the date of actual payment at an annual rate of five (5) percentage points above the prime rate quoted by Chase Manhattan Bank, New York, New York, on the day payment was due, or at the greatest rate permitted by law, if lower, until paid. If the original revenue share payment was more than ten percent (10%) less than it should have been, the cost of the audit shall be reimbursed by ARCADIA.

4.5. Late Payment. If any revenue share payments owed under this Agreement are not paid when due, the unpaid amount shall bear interest, compounded annually, at an annual rate of two (2) percentage points above the prime rate quoted by Chase Manhattan Bank of New York on the day payment was due or at the greatest rate permitted by law, if lower, until paid or offset. Any amount that remains unpaid on account of a good faith dispute for which the provisions of Section 7.2 have been invoked shall, if ultimately deemed to be owed to BLUE HORSE, bear interest, compounded annually, at an annual rate equal to the prime rate quoted by Chase Manhattan Bank of New York on the day the amount was due.

5. CONFIDENTIALITY.

5.1. As used herein, "Confidential Information" means any information of a Party that is designated confidential in writing at the time of disclosure, or if disclosed orally, information which the receiving Party reasonably should have known was confidential or which is confirmed in writing as confidential within thirty (30) days.

5.2. Obligations. Should either Party disclose to the other any of such Party's Confidential Information (the "Disclosing Party"), the Party receiving the Confidential Information (the "Receiving Party") shall maintain the Confidential Information in confidence, shall use at least the same degree of care to maintain the secrecy of the Confidential Information as it uses in maintaining the secrecy of its own proprietary, confidential and trade secret information, shall always use at least a reasonable degree of care in maintaining the secrecy of the Confidential Information, shall use the Confidential Information only for the purpose of performing its obligations under this Agreement and exercising its rights under this Agreement unless otherwise agreed in writing by the Disclosing Party, and shall deliver to the Disclosing

Party, in accordance with any request from the Disclosing Party, all copies, notes, packages, diagrams, computer memory media and all other materials containing any portion of the Disclosing Party's Confidential Information which reasonably is not required by the Receiving Party to perform its obligations under and/or to exercise its rights under this Agreement. The Receiving Party shall not disclose any of the Disclosing Party's Confidential Information to any person except to those Receiving Party Affiliates, employees and consultants having a need to know such Confidential Information in order to accomplish the purposes and intent of this Agreement. The Receiving Party shall ensure that each such Affiliate, employee and consultant has been instructed to keep confidential the Confidential Information of the Disclosing Party and shall ensure that each such Affiliate, employee or consultant has signed a confidentiality agreement covering the Confidential Information of the Disclosing Party.

5.3. Exceptions. Notwithstanding Section 5.1:

5.3.1. A Receiving Party shall have no obligation with respect to any portion of Confidential Information of the Disclosing Party that (i) the Receiving Party is able to demonstrate, in writing, was rightfully known to the Receiving Party on a non-confidential basis prior to receipt of such information from the Disclosing Party, (ii) is lawfully obtained by the Receiving Party from a third party under no obligation of confidentiality, (iii) is independently developed by the Receiving Party without use of the Confidential Information of the Disclosing Party, or (iv) is or becomes publicly available other than as a result of any act or failure to act of the Receiving Party.

5.3.2. A Receiving Party may disclose the Confidential Information of the Disclosing Party pursuant to a subpoena or other legal process, provided that the Disclosing Party is provided prior notice reasonably sufficient to permit the Disclosing Party to obtain a protective order, and provided further that such disclosure shall not relieve the Receiving Party from future adherence to Section 5.1 with respect to such Confidential Information.

5.3.3. A Receiving Party may also disclose the Confidential Information of the Disclosing Party for purposes of soliciting or securing financing and/or in connection with the Receiving Party's licensing activities, provided that (i) such disclosure of Confidential Information is reasonably necessary to advance such financing and/or licensing activities, and (ii) the third party(ies) to whom such Confidential Information is disclosed agree(s), in writing, to maintain the confidentiality of such Confidential Information.

5.4. Reservation. Unless expressly provided for in this Agreement, a Disclosing Party shall retain all rights, title and interest in its own Confidential Information.

5.5. Agreement as Confidential Information. Neither Party shall issue a press release or other publication announcing the existence of this Agreement or disclose the terms and conditions of the Agreement to any third party without the prior written consent of the other Party; except, however, that each Party may disclose the terms and conditions of this Agreement: (i) as required by any court or other governmental body; (ii) as otherwise required by law; (iii) to its legal counsel; (iv) in confidence, to accountants, banks, and financing sources and their advisors solely for the purposes of a Party's securing financing; (v) in connection with the enforcement of this Agreement or rights under this Agreement; or (vi) in confidence, in

connection with an actual or proposed merger, acquisition, license negotiation, or similar transaction solely for use in the due diligence investigation in connection with such transaction.

5.6. Actions on Termination. Upon any termination of this Agreement, BLUE HORSE agrees to return or permanently destroy, at ARCADIA's sole discretion and upon ARCADIA's written request, all Confidential Information owned by ARCADIA in BLUE HORSE's possession. Upon any termination of this Agreement, ARCADIA agrees to return or permanently destroy, at BLUE HORSE's sole discretion and upon BLUE HORSE's written request, all Confidential Information owned by BLUE HORSE in ARCADIA's possession.

6. REPRESENTATIONS AND WARRANTIES; LIMITATION OF LIABILITY.

6.1. Right to Enter Agreement. ARCADIA and BLUE HORSE each represent and warrant that they have the right to make conveyances and grants in accordance with this Agreement.

6.2. Limitation of Liability. EXCEPT FOR BREACHES OF THE CONFIDENTIALITY OBLIGATIONS HEREIN, NEITHER PARTY WILL BE LIABLE TO THE OTHER WITH RESPECT TO THE SUBJECT MATTER OF THIS AGREEMENT FOR ANY INCIDENTAL, INDIRECT, CONSEQUENTIAL, SPECIAL, OR PUNITIVE DAMAGES, OR LOST PROFITS OR THE COST OF PROCUREMENT OF SUBSTITUTE GOODS, TECHNOLOGY OR SERVICES REGARDLESS OF WHETHER ANY SUCH CLAIM FOR DAMAGES, LOST PROFITS OR OTHER COSTS IS BASED ON TORT, WARRANTY, CONTRACT OR ANY OTHER LEGAL THEORY, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

6.3. Risk of Failure; No Representations. ARCADIA and BLUE HORSE each recognize that risk is inherent in the collaborative efforts such as those being undertaken in this Agreement and each therefore voluntarily assumes this risk. Accordingly, subject to the rights to terminate provided in Section 2, any other failure of any Intellectual Property provided for use in connection with or developed under this Agreement to perform as desired despite the reasonable efforts of the responsible Party or Parties will not be deemed to be a breach of this Agreement. Other than as expressly set forth in this Agreement, NEITHER PARTY MAKES ANY REPRESENTATION OR WARRANTY, EXPRESS OR IMPLIED, WITH RESPECT TO INTELLECTUAL PROPERTY OWNED OR LICENSED BY THAT PARTY OR ANY KNOW-HOW INCLUDING, WITHOUT LIMITATION, ANY WARRANTY OF NONINFRINGEMENT, PATENTABILITY, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

7. APPLICABLE LAW; DISPUTE RESOLUTION.

7.1. Governing Law; Jurisdiction. The validity, interpretation and performance of this Agreement and any dispute connected with this agreement shall be governed by and determined in accordance with the statutory, regulatory, and decisional law of the state of Arizona and any legal actions or proceedings brought by either Party shall be subject to the exclusive jurisdiction of the state and federal courts in Maricopa County, Arizona, and any mediation or arbitration proceeding initiated by either Party pursuant to Section 7.2 shall occur in Maricopa County,

Arizona (unless otherwise agreed by both Parties), and each Party hereby consents to the jurisdiction of the courts as provided above.

7.2. Dispute Resolution. If a dispute arises out of or relates to this Agreement, or the breach thereof, and if the dispute cannot be settled through negotiation, the Parties agree first to try in good faith to settle the dispute by mediation before resorting to arbitration, litigation, or some other dispute resolution procedure. Unless the Parties agree otherwise, any such mediation shall be held in Phoenix, Arizona.

8. MISCELLANEOUS PROVISIONS.

8.1. Notices. All notices and other communications required or permitted under this Agreement shall be deemed to be properly given when in writing and sent by registered or certified mail, postage prepaid or by reputable courier service providing evidence of delivery or by facsimile with receipt confirmation, to the other Party at the address set forth below, or at such other address as either Party may in writing designate from time to time for these purposes.

If to BLUE HORSE: Blue Horse Labs, Inc.
[…*…]
[…*…]
[…*…]
Attention: President
Fax No.: […*…]

If to ARCADIA: Arcadia Biosciences, Inc.
202 Cousteau Place #200
Davis, CA 95616
Attention: President
Fax No.: 530-756-7027

8.2. Assignability. The rights and obligations acquired herein by the Parties are not assignable, transferable or otherwise conveyable, in whole or part (by operation of law or otherwise) to any third party without the consent of other Party, which shall not be unreasonably withheld; provided, however, that either Party may, without such consent, assign its rights and obligations hereunder to any purchaser of all or substantially all of the assets of the Party related to this Agreement or to any successor corporation resulting from any merger or consolidation of a Party. Moreover, either Party may, without the consent of the other Party, assign to any purchaser of all or substantially all of the assets of the Party related to any program identified in the Sponsored Research Agreement (i.e., [...*...]), its rights and obligations hereunder applicable to such program. Any attempted assignment conflicting with this Section shall be null and void and without effect.

8.3. Severability. In case any one or more of the provisions contained in this Agreement shall for any reason be held invalid, illegal or unenforceable in any respect, such invalidity, illegality or unenforceability shall not affect any other provisions hereof, but this Agreement shall be construed as if such invalid or illegal or unenforceable provisions had never been contained herein.

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

8.4. Counterparts. This Agreement may be executed in two (2) counterparts, each of which shall be an original with the same effect as if the signatures thereto and hereto were upon the same instrument.

8.5. Headings. Headings as to the contents of particular Sections are for convenience only and are in no way to be construed as part of this Agreement or as a limitation of the scope of the particular Sections to which they refer.

8.6. Force Majeure. Except for payments of money, neither of the Parties shall be liable for any default or delay in performance of any obligation under this Agreement caused by any of the following: act of nature, war, riot, fire, explosion, accident, flood, sabotage, compliance with governmental requests, laws, regulations, orders or actions, national defense requirements or any other event beyond the reasonable control of such Party; or labor trouble, strike, lockout or injunction (provided that neither of the Parties shall be required to settle a labor dispute against its own best judgment). The Party invoking this subparagraph shall give the other Party written notice pursuant to Section 8.1 and full particulars of such force majeure event as soon as possible after the occurrence of the cause upon which said Party is relying. Both ARCADIA and BLUE HORSE shall use reasonable efforts to mitigate the effects of any force majeure on their respective part.

8.7. Negation of Agency. It is agreed and understood by the Parties hereto that each of BLUE HORSE and ARCADIA, in performance of its obligations and responsibilities under this Agreement, is an independent contractor and that nothing herein contained shall be deemed to create an agency, partnership, joint venture or similar relationship between the Parties. The manner by which each of BLUE HORSE and ARCADIA carries out its performance under this Agreement is within each of BLUE HORSE's and ARCADIA's sole discretion and control.

8.8. Other Requests. The Parties hereto agree that upon reasonable request of the other Party, each such Party shall execute and deliver such additional documents and Agreements, and take such further actions, as may be necessary in order to fulfill and give effect to the terms of this Agreement.

8.9. Integration; Amendment and Waiver. This Agreement, including any exhibits or other attachments hereto, constitutes the entire agreement of the Parties with respect to the subject matter hereof, and supersedes all prior or contemporaneous understandings or agreements, whether written or oral, between the Parties with respect to the subject matter hereof. This Agreement may be amended, modified, superseded or canceled, and any of the terms may be waived, only by a written instrument executed by both Parties or, in the case of waiver, by the Party or Parties waiving compliance. The delay or failure of any Party at any time or times to require performance of any provisions shall in no manner affect the rights at a later time to enforce the same. No waiver by any Party of any condition or of the breach of any term contained in this Agreement, whether by conduct, or otherwise, in any one or more instances, shall be deemed to be, or considered as, a further or continuing waiver of any such condition or of the breach of such term or any other term of this Agreement.

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

IN WITNESS WHEREOF, the Parties hereto have caused this Agreement to be executed and delivered as of the Effective Date.

BLUE HORSE LABS, INC.		ARCADIA BIOSCIENCES, INC.	
By:	/s/ Jonathan Thatcher	By:	/s/ Eric J. Rey
Name:	Jonathan Thatcher	Name:	Eric J. Rey
Its:	Treasurer	Its:	President & CEO
Date:	5/19/08	Date:	5/15/08

APPENDIX A
BLUE HORSE IP

Country Code	Application Number	Title	Inventors	Filing Date	Patent Number
US	11/438,951	Safflower with elevated gamma-linolenic acid	Emlay, Donald Flider, Frank J. Knauf, Vic C. Rey, Eric Shewmaker, Christine	5/22/2006	
PCT	PCT/US2006/20047	Safflower with elevated gamma-linolenic acid	Emlay, Donald Flider, Frank J. Knauf, Vic C. Rey. Eric Shewmaker, Christine	5/22/2006	
AR	P060102090	Safflower with elevated gamma-linolenic acid	Emlay, Donald Flider, Frank J. Knauf, Vic C. Rey. Eric Shewmaker, Christine	5/22/2006	
US	11/644,321	Nitrogen-efficient monocot plants	Good, Allen G. Depauw, Mary Shrawat, Askok Theodoris, George Kridl, Jean C.	12/21/2006	
PCT	PCT/US2006/49241	Nitrogen-efficient monocot plants	Good, Allen G. Depauw, Mary Shrawat, Askok Theodoris, George Kridl, Jean C.	12/21/2006	
AR	60105745	Nitrogen-efficient monocot plants	Good, Allen G. Depauw, Mary Shrawat, Askok Theodoris, George Kridl, Jean C.	12/21/2006	
TH	601006505	Nitrogen-efficient monocot plants	Good, Allen G. Depauw, Mary Shrawat, Askok Theodoris, George Kridl, Jean C.	12/22/2006	

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

Country Code	Application Number	Title	Inventors	Filing Date	Patent Number
US	11/644,453	Promoter sequence obtained from rice and methods of use	Good, Allen G. Depauw, Mary Shrawat, Askok	12/21/2006	
PCT	PCT/US2006/48875	Promoter sequence obtained from rice and methods of use	Good, Allen G. Depauw, Mary Shrawat, Askok	12/21/2006	
AR	60105746	Promoter sequence obtained from rice and methods of use	Good, Allen G. Depauw, Mary Shrawat, Askok	12/21/2006	
TH	601006506	Promoter sequence obtained from rice and methods of use	Good, Allen G. Depauw, Mary Shrawat, Askok	12/22/2006	
US	60/797,001	Nitrogen-efficient field-grown plants	Lu, Zhongjin	5/2/2006	

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

Exhibit 10.3

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

EXCLUSIVE LICENSE AGREEMENT

BETWEEN

ARCADIA BIOSCIENCES, INC.

AND

THE REGENTS OF THE UNIVERSITY OF CALIFORNIA

FOR

DROUGHT-RESISTANT PLANTS

UC Case No.: 2005-095

TABLE OF CONTENTS

EXCLUSIVE LICENSE AGREEMENT FOR
DROUGHT-RESISTANT PLANTS

U.C. Case No.: 2005-095

This EXCLUSIVE LICENSE AGREEMENT ("Agreement") is effective July 2, 2010 ("Effective Date"), by and between (a) The Regents of the University of California ("The Regents"), a California corporation, having its statewide administrative offices at 1111 Franklin Street, 12th Floor, Oakland, California 94607-5200, acting through its Davis Campus Technology Transfer Services, at the University of California, Davis, 1850 Research Park Drive, Suite 100, Davis, CA 95618-6134, and (b) Arcadia Biosciences, Inc. ("Licensee"), an Arizona corporation having a principal place of business at 202 Cousteau Place, Suite 200, Davis, California 95618. The Regents and Licensee will be referred to herein, on occasion, individually as a "Party" or collectively as the "Parties".

RECITALS

WHEREAS, the invention entitled "Drought-Resistant Plants" (the "Invention"), as described in The Regents' Case No. 2005-095, was conceived at the Davis campus of the University of California, Davis, by Dr. Eduardo Blumwald ("Eduardo Blumwald"), Dr. Amira Gepstein ("Amira Gepstein"), and Dr. Shimon Gepstein ("Shimon Gepstein"), with Eduardo Blumwald, Shimon Gepstein, and Amira Gepstein referred to herein collectively as "the Inventors";

WHEREAS, at the time the Invention was conceived, Amira Gepstein and Shimon Gepstein, while on leave from the Technion Research and Development Foundation ("Technion") of Haifa, Israel, were visiting scientists at the University of California, Davis, conducting research in the laboratory of Eduardo Blumwald;

WHEREAS, the Invention was conceived as a joint work of the Inventors, **[…*…]**

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

[…*…]

WHEREAS, patent applications based on the Invention, which patent applications and any patents issued thereon are included within Patent Rights (as that term is defined herein), were filed at the request of The Regents;

WHEREAS, the Inventors signed certain Assignment documents by which the Inventors assigned all right, title, and interest in and to the Patent Rights, and to the Invention as disclosed in the Patent Rights, to The Regents;

WHEREAS, The Regents and Licensee entered into a Letter Agreement ("Letter Agreement") effective March 14, 2006 (UC Agreement Control No. 2006-30-0534), as extended by (1) the Extension Agreement effective September 11, 2006, (2) the Second Extension Agreement effective December 14, 2006, (3) the Third Extension Agreement effective March 21, 2007, and (4) the Fourth Extension Agreement effective June 26, 2007, which Letter Agreement, as so extended, terminated August 1, 2007, which granted Licensee an exclusive right to negotiate an option agreement, and under the terms of the option agreement, to negotiate an exclusive license under the Patent Rights;

WHEREAS, The Regents and Licensee entered into an Option Agreement effective August 1, 2007 (UC Agreement Control No. 2008-11-0080), which was subsequently modified by First Amendment (UC Control No. 2008-11-080 REVA) effective February 1, 2008, by Second Amendment (UC Control No. 2008-11-080 REVC) effective August 27, 2009, and by Third Amendment (UC Control No. 2008-11-0080 REVD) effective February 28, 2010, which Option Agreement granted Licensee an exclusive right to negotiate an exclusive license under the Patent Rights;

[…*…]

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

[…*…]

[…*…]

[…*…]

[…*…]

WHEREAS, Licensee is a "small entity" as defined in 37 CFR 1.27;

WHEREAS, The Regents and Licensee desire to have the Invention developed and commercialized so that products resulting therefrom may be available for public use and benefit; and

WHEREAS, Licensee desires to acquire, and The Regents desires to grant to Licensee, an exclusive license under the Patent Rights to manufacture, have manufactured, use, have used, sell, have sold, offer for sale, and import products, methods and services falling within the scope of the claims of the Patent Rights, in accordance with the terms herein.

Now, therefore, the Parties agree as follows:

1. DEFINITIONS

1.1. "Affiliate" of Licensee (or Sublicensee, respectively) means any entity that, directly or indirectly, Controls Licensee (or Sublicensee, respectively), is Controlled by Licensee (or Sublicensee, respectively), or is under common Control with Licensee (or Sublicensee, respectively). "Control" means (i) having the actual, present capacity to elect a majority of the directors of such entity, (ii) having the power to direct at least forty percent (40%) of the voting rights entitled to elect directors of such entity, or (iii) in any country where the local law will not permit foreign equity participation of a majority of the outstanding stock or voting rights, the ownership or control, directly or indirectly, of the maximum percentage of such outstanding stock or voting rights permitted by local law.

1.2. "Joint Venture" means any separate entity established pursuant to an agreement between a third party and the Licensee, or between a third party and a Sublicensee, to constitute a vehicle for a joint venture, in which the separate entity manufactures, uses, purchases, Sells, or acquires Licensed Products or Licensed Services from the Licensee or from a Sublicensee.

1.3. "Licensed Field of Use" means all uses.

1.4. "Licensed Method" means any process or method the use or practice of which, but for the license granted pursuant to this Agreement, (a) would infringe, or contribute to or induce the infringement of, a Valid Claim of any issued, unexpired patent under the Patent Rights, or (b) is covered by a claim in a pending patent application under Patent Rights. As used in subsection (b) of this Paragraph 1.4, "covered by a claim in a pending patent application" means that such use or practice would, but for the license granted pursuant to this Agreement, constitute infringement, or contributory infringement, or inducement of infringement of such claim if such claim were issued.

1.5. "Licensed Product" means any product, material, kit, or other article of manufacture or composition of matter, the manufacture, use, Sale, offer for Sale, or import of which (a) would require the performance of Licensed Methods, or (b) but for the license granted pursuant to this Agreement, would infringe, or contribute to or induce the infringement of a Valid Claim of any issued, unexpired patent under Patent Rights, or (c) is covered by a claim in a pending patent application under the Patent Rights. As used in subsection (c)

above of this Paragraph 1.5, "covered by a claim in a pending patent application" means that such manufacture, use, Sale, offer for Sale or import would, but for the license granted pursuant to this Agreement, constitute infringement, or contributory infringement, or inducement of infringement of such claim if such claim were issued.

1.6. "Licensed Service" means a service provided using Licensed Products or Licensed Methods, including without limitation any such service provided in the form of contract research or other research performed by Licensee on behalf of a third party.

1.7. "Licensed Territory" means United States of America and its territories and possessions, and any foreign countries where Patent Rights exist.

1.8. "Net Invoice Price" means (a) the gross invoice price charged and received by Licensee for a Licensed Product or Licensed Service, and/or the fair market value of any other consideration received by Licensee for a Licensed Product or Licensed Service, or (b) in those instances where the Licensed Product or Licensed Service is combined in any manner with any other product or service, the gross invoice price charged and received by Licensee for the combined product or service, and/or the fair market value of any other consideration received by Licensee, less the following items, but only to the extent that they actually pertain to the disposition of such Licensed Product or Licensed Service, and are separately billed:

(a) allowances actually granted to customers for rejections, returns, or prompt payment or volume discounts;

(b) freight, transport packing, or insurance charges associated with transportation;

(c) taxes, including Deductible Value-Added Tax, tariffs or import/export duties based on Sales when included in the gross invoice price, but excluding value-added taxes other than Deductible Value-Added Tax; "Deductible Value-Added Tax" means value-added tax only

to the extent that such value-added tax is actually incurred and is not reimbursable, refundable, or creditable under the tax authority of any country;

(d) discounts or rebates paid or credited to customers, third-party payers, health-care systems, or administrators solely to promote the inclusion of a Licensed Product or Licensed Service in formulary programs;

(e) wholesaler's discounts or rebates to customers, third-party payers, health-care systems, or administrators solely to promote the inclusion of a Licensed Product or Licensed Service in formulary programs; and

(f) rebates or discounts paid or credited pursuant to applicable law.

1.9. "Net Royalty Revenues" means the value of any royalty revenues, licensee fees, or other consideration received by Licensee from a Sublicensee for a Licensed Product or Licensed Service less the following:

(a) fees or commissions paid to any third party broker or the like in connection with the execution of the applicable Sublicense Agreement; and

(b) that part of any tax or duty, other than income tax, actually paid by Licensee in connection with any sublicensing activities for which Licensee is not eligible for a refund of the tax paid (for greater clarity, if Licensee is eligible for a partial refund, only the portion of the tax paid that is not eligible to be refunded will be included in the deduction from gross revenues).

1.10. "Net Sales" means the Net Invoice Price, provided that in the instances described in Subparagraphs (a) and (b) below of this Paragraph 1.10, Net Sales will have the meaning set forth in such Subparagraphs, as follows:

(a) In those instances where there is a Relationship-Influenced Sale of a Licensed Product or Licensed Service, Net Sales will be based on the Net Invoice Price at which the Relationship-Influenced Sale Purchaser resells such Licensed Product or Licensed Service.

(b) In those instances where a Licensed Product or Licensed Service is not Sold, but is otherwise exploited, the Net Sales for such Licensed Product or Licensed Service will be the Net Invoice Price of products or services of

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

the same or similar kind and quality, Sold in similar quantities, currently being offered for Sale by the Licensee. Where such products or services are not currently being offered for Sale by the Licensee, the Net Sales for a Licensed Product or Licensed Service otherwise exploited, for the purpose of computing royalties, will be the average Net Invoice Price at which products or services of the same or similar kind and quality, Sold in similar quantities, are then currently being offered for Sale by other manufacturers. Where such products or services are not currently Sold or offered for Sale by the Licensee, or others, then the Net Sales will be the Licensee's cost of manufacture of the Licensed Product or the cost of conducting the Licensed Service, determined by the Licensee's customary accounting procedures, plus ten percent (10%).

1.11. "Patent Rights" means rights owned by, or otherwise licensable by, The Regents and Technion in the claims of the following:

(a) U.S. National Stage Non-Provisional Patent Application Serial Number 11/909,262, entitled "Drought-Resistant Plants," filed March 21, 2006, based on PCT Patent Application Serial Number PCT/US2006/010678, entitled "Drought-Resistant Plants," filed March 21, 2006, which is in turn based on U.S. Provisional Patent Application Serial Number 60/664,035, entitled "Drought-Resistant Plants," filed March 21, 2005;

(b) Foreign National Stage Patent Applications in the following countries, based on the above-referenced PCT Patent Application:

(i) Australia Patent Application Serial Number 2006226863;

(ii) Brazil Patent Application Serial Number PI 0607732-3;

(iii) Canada Patent Application Serial Number 2601605;

(iv) China Patent Application Serial Number 200680009038.9;

(v) Europe Patent Application Serial Number 06739467.6;

(vi) India Patent Application Serial Number 4024/KOLNP/2007;

(vii) Indonesia Patent Application Serial Number W00200703096;

(viii) Mexico Patent Application Serial Number 2007/011612; and

(ix) South Africa Patent Application Serial Number 2007/07905.

(c) Continuing patent applications of any of the foregoing patent applications, including divisions, substitutions, extensions and continuations-in-part (but as to continuations-in-part, only to the extent the claims in the continuation-in-part applications are entitled to the priority date of any one or more of the foregoing patent applications);

(d) Any U.S. or foreign patent issuing on any of the foregoing patent applications or continuing patent applications.

1.12. "Related Party" means a corporation, a firm, or other entity with which, or an individual with whom, Licensee and/or any Sublicensee (or any of their respective stockholders, subsidiaries or Affiliates) have an agreement, understanding, or arrangement (for example, but not by way of limitation, an option to purchase stock or other equity interest, or an arrangement involving a division of revenue, profits, discounts, rebates, or allowances) unrelated to the Sale or exploitation of Licensed Products or Licensed Services without which such agreement, understanding, or arrangement, the amounts, if any, charged by the Licensee or Sublicensee to such entity or individual for the Licensed Product or Licensed Service would be higher than the Net Invoice Price actually received, or if such agreement, understanding, or arrangement results in Licensee or a Sublicensee extending to such entity or individual lower prices for such Licensed Product or Licensed Service than those charged to others without such agreement, understanding, or arrangement buying similar products or services in similar quantities.

1.13. "Relationship-Influenced Sale" means a Sale of a Licensed Product or Licensed Service (a) between the Licensee and (i) an Affiliate of the Licensee, (ii) a Joint Venture of the Licensee, (iii) a Related Party of the Licensee, or (iv) a Sublicensee; or (b) between a Sublicensee and (i) an Affiliate of the Sublicensee, (ii) a Joint Venture of the Sublicensee, or (iii) a Related Party of the Sublicensee.

1.14. "Relationship-Influenced Sale Purchaser" means the purchaser of Licensed Product or Licensed Service in a Relationship-Influenced Sale.

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

1.15. "Sale" means, for Licensed Products and Licensed Services, the act of selling, leasing or otherwise transferring, providing, or furnishing such product or service for any consideration. Correspondingly, "Sell" means to make or cause to be made a Sale, and "Sold" means to have made or caused to be made a Sale.

1.16. "Sublicense" means a sublicense under this Agreement.

1.17. "Sublicensee" means a sublicensee under this Agreement.

1.18. "Sublicense Agreement" means a sublicense agreement under this Agreement.

1.19. "Valid Claim" means a claim of an issued patent in any country where the claim (i) has not expired, (ii) has not been disclaimed, (iii) has not been cancelled or superseded, or if cancelled or superseded, has been reinstated or is the subject of a continuation, continuation-in-part, reissue, or divisional application; and (iv) has not been revoked, held invalid, or otherwise declared unenforceable or not allowable by a tribunal or patent authority of competent jurisdiction over such claim in such country from which no further appeal has or may be taken.

2. GRANT

2.1. Subject to the limitations set forth in this Agreement, including without limitation the rights reserved in Paragraph 2.2, The Regents hereby grants to Licensee an exclusive license under the Patent Rights to make, have made, use, have used, offer for Sale, import, Sell and have Sold Licensed Products and Licensed Services, and to practice Licensed Methods in the Licensed Field of Use in the Licensed Territory.

2.2. The license grant of Paragraph 2.1 is subject to the following retained rights:

(a) the retained right of The Regents and Technion to publish any technical data and other information resulting from research performed by The Regents or by Technion, respectively, relating to the Invention, subject to (and only to the extent of) any obligations that The Regents or Technion, respectively, may owe Licensee with respect to such publishing (i) under any separate research funding agreement between The Regents or Technion, respectively, and Licensee or (ii) under any other separate agreement between The Regents or Technion, respectively, and Licensee, where such other separate agreement has a pre-publication review

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

clause (and other clauses as required under the policy of The Regents or Technion, respectively) similar to that found appropriate under the policy of The Regents or Technion, respectively, for research funding agreements;

(b) the retained right of The Regents and Technion to make and use the Invention and associated technology for educational and research purposes;

(c) the retained right of The Regents and Technion to practice the Patent Rights in order to make and use products, and to practice methods, for educational and research purposes; and

(d) the retained right of The Regents to allow other educational and non-profit institutions to do any one or more of the activities of Subparagraphs 2.2 (a), (b), and (c) above, for educational and research purposes.

2.3. Paragraph 2.2 notwithstanding, The Regents and Licensee understand and agree to the provisions set forth below in this Paragraph 2.3, which provisions are in accordance with the corresponding provisions of the Inter-Institutional Agreement between The Regents and Technion:

(a) It is the intent of The Regents and Licensee that licenses be granted by The Regents and/or Technion under the Patent Rights, for educational and research purposes, to any non-profit or educational institution, in order to promote research relating to the Invention worldwide.

(b) It is understood and agreed that each of The Regents and Technion may grant such licenses, provided that, (i) any such licenses granted by Technion will be subject to prior written approval by The Regents, with such approval to take place no later than ten (10) days following request by Technion for such approval and with such approval not to be unreasonably withheld (and it is understood and agreed that, for avoidance of doubt, The Regents' oversight of any such requested license by Technion is made only in order to ensure both consistency in the scope of such licenses and proper dovetailing of such licenses with the grant to Licensee under this Agreement); and (ii) The Regents will inform Technion of each license granted by The Regents for educational and research purposes to any non-profit or educational institution, every six (6) months.

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

(c) It is understood and agreed that every six (6) months The Regents will inform Technion of each such license granted by The Regents for educational and research purposes, to any non-profit or educational institution.

(d) It is understood and agreed that, for avoidance of doubt, Technion has the right to provide license rights to Technion's SARK:IPT construct and Technion's transgenic plants containing the SARK:IPT construct, solely for educational and research purposes, to any non-profit or educational institution.

(e) It is understood and agreed that The Regents and Technion have the reserved right to make and use the Invention, and to practice the Patent Rights, for educational and research purposes ("Further Research"), and that the results of such Further Research and any intellectual property rights generated therein (including without limitation, any inventions, developments, advancements or improvements to the Invention, know-how, technology or technological information) will belong solely to the inventing Party and will not be part of, and will not be considered as part of, the Inter-Institutional Agreement or this Agreement.

(f) It is understood and agreed that either The Regents or Technion, or both, may engage in sponsored research with Licensee, for further research and development based on the Invention, with no accounting of The Regents and Technion to each other, and that each of The Regents and Technion may freely and solely negotiate and agree on terms and conditions of such sponsored research as long as such sponsored research complies with the terms of the Inter-Institutional Agreement and this Agreement.

2.4. Nothing in this Agreement will be deemed to grant any rights or licenses to (a) The Regents, (b) Technion, or (c) any third party, to any of Licensee's technology, including enabling technology needed to practice the Patent Rights.

3. SUBLICENSES

3.1. The Regents hereby further grants to Licensee the right to grant to Affiliates of Licensee and to third parties a Sublicense under the rights granted to Licensee hereunder. Every Sublicense will include:

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

(a) a statement setting forth the date upon which Licensee's exclusive license rights hereunder will expire;

(b) a provision requiring the performance of all the obligations due to The Regents and Technion (and, if applicable, the United States Government) under this Agreement other than those rights and obligations specified in Article 4 (License Issue Fee/Maintenance Fees) and Paragraph 5.1 (Earned Royalties);

(c) an equivalent provision for indemnification of The Regents and Technion as has been provided for in this Agreement.

3.2. Licensee will notify The Regents of each Sublicense granted hereunder and furnish to The Regents a copy of each such Sublicense Agreement and any amendments thereof.

3.3. Affiliates of Licensee and Affiliates of Sublicensee will have no licenses under Patent Rights except as granted by Sublicense pursuant to this Agreement.

3.4. Licensee will collect and guarantee payment of all monies and other consideration due The Regents from Sublicensees, and will deliver all reports due The Regents and received from Sublicensees.

3.5. Upon termination of this Agreement for any reason, all Sublicenses that are granted by Licensee pursuant to this Agreement, where the Sublicensee is in compliance with its Sublicense Agreement as of the date of such termination, will remain in effect and will be assigned to The Regents, except that The Regents will not be bound to perform any duties or obligations set forth in any Sublicenses that extend beyond the duties and obligations of The Regents set forth in this Agreement.

3.6. Licensee is responsible for enforcement of the terms of Sublicense Agreements.

4. LICENSE ISSUE FEE/MAINTENANCE FEES

4.1. Licensee will pay to The Regents a non-creditable, non-refundable license issue fee ("License Issue Fee") of **[…*…]** due within fifteen (15) days of the Effective Date of this Agreement. The License Issue Fee is non-refundable and not an advance against royalties or other payments due under this Agreement.

4.2. Licensee will pay to The Regents a license maintenance fee ("License Maintenance Fee") of **[…*…]**, the first of which will be due on the second anniversary

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

of the Effective Date, with each subsequent License Maintenance Fee becoming due on each subsequent anniversary of the Effective Date thereafter. Each License Maintenance Fee will be treated as a minimum annual royalty payment and will be credited against Earned Royalties due for the calendar year in which payment of the License Maintenance Fee is made.

5. ROYALTIES

5.1. Licensee will pay to The Regents earned royalties ("Earned Royalties") at the rate of **[…*…]** of the Net Sales of all Licensed Products and Licensed Services, and **[…*…]** of Net Royalty Revenues.

5.2. Notwithstanding the provisions of Paragraph 5.1, for each additional license to patent rights that is held by Licensee under a written, compensation-bearing agreement with a third party and that is necessary for Licensee to practice the Patent Rights in order to make Net Sales (which third party license agreements will be subject to verification by The Regents), the royalty rate for such Net Sales will be decreased by **[…*…]**. For example, if one such additional license is required, the royalty rate for Net Sales will be decreased to **[…*…]**, and if two such additional licenses are required, the royalty rate for Net Sales will be decreased to **[…*…]**. In no event will the royalty rate for Net Sales be less than **[…*…]**.

5.3. Earned Royalties accruing to The Regents will be paid to The Regents semi-annually within two (2) months after the end of each calendar half as follows: August 31 (for first half) and February 28 (for second half).

5.4. All payments due The Regents will be payable in United States dollars.

5.5. When Licensed Products and Licensed Services are Sold for monies other than United States dollars, Earned Royalties will first be determined in the foreign currency of the country in which the Sale was made and then converted into equivalent United States dollars. The exchange rate will be that rate quoted in the *Wall Street Journal* on the last business day of the reporting period.

5.6. Licensee will make all payments under this Agreement either by check or electronic transfer, payable to "The Regents of the University of California" and Licensee will

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

forward such payments to The Regents at the address shown in Paragraph 23.1 below. Payments due for Sales occurring in any country outside the United States will not be reduced by any taxes, fees, or other charges imposed by the government of such country on the remittance, except for and subject to offsets to Net Invoice Price in accordance with Subparagraphs 1.8 (a) — (f). Licensee will be responsible for all bank transfer charges.

5.7. If any patent or patent application, or any claim thereof, included within Patent Rights expires or is held invalid in a final decision by a court of competent jurisdiction and last resort and from which no appeal has been or can be taken, all obligation to pay Earned Royalties based on such patent, patent application or claim, or any claims patentably indistinct therefrom will cease as of the date of such expiration or final decision. Licensee will not, however, be relieved from paying any Earned Royalties that accrued before such expiration or decision or that are based on another valid patent or claim not expired or involved in such decision.

6. DILIGENCE

6.1. Licensee, upon execution of this Agreement, will diligently proceed with the development, manufacture, and Sale of Licensed Products, Licensed Services, and Licensed Methods, and will diligently market them in quantities sufficient to meet the market demand.

6.2. In addition to its obligations under Paragraph 6.1, Licensee specifically commits to achieving the following milestones (either itself, or through its Sublicensees) in its activities under this Agreement:

(a) Milestone #1: Greenhouse Proof of Concept — on or before **[…*…]**;

(b) Milestone #2: Field Proof of Concept — on or before **[…*…]**;

(c) Milestone #3: Regulatory Submission — on or before **[…*…]**;

(d) Milestone #4: Regulatory Approval — on or before **[…*…]**; and

(e) Milestone #5: Commercial Launch of a Licensed Product — on or before **[…*…]**.

6.3. If The Regents believes that Licensee has failed to meet any milestone set forth in Paragraphs 6.1 and 6.2 by the date set forth therein (if applicable), The Regents will provide written notice to Licensee of the same within a reasonable time. License will have one hundred and twenty (120) days from the date of such written notice ("Cure Period") to complete the stated milestone or otherwise fulfill the stated diligence obligations. If Licensee is unable to complete the stated milestone or otherwise fulfill the stated diligence obligations within the Cure Period, Licensee may extend the completion date of such milestone or diligence obligation for a period of six (6) months from the expiration of the Cure Period upon the payment of **[…*…]**, due within ten (10) days of expiration of the Cure Period. Licensee may further extend the completion date of any milestone or diligence obligation for an additional six (6) months upon payment of an additional **[…*…]**. Additional extensions may be granted only by mutual written agreement of the Parties. All such payments to extend deadlines are in addition to the annual License Maintenance Fee payment specified in Paragraph 4.2. Should Licensee opt not to pay to extend the completion date or if Licensee should fail to complete the stated milestone or otherwise fulfill the stated diligence obligations by any extended target date, then The Regents may provide written notice to Licensee that the license granted in Paragraph 2.1 has been converted to a non-exclusive license, effective as of the date of expiration of the Cure Period or any extended target date, whichever is later.

(a) Unless earlier terminated in accordance with other provisions of this Agreement, the non-exclusive license will remain in effect for one (1) year from the date of conversion under this Paragraph 6.3. If at the end of such one-year period, Licensee has satisfied its diligence obligations (allowing for any extensions pursuant to this Paragraph 6.3), then the non-exclusive license will continue in effect, provided that, subsequent to the end of such one-year period, The Regents will not be entitled to grant any additional licenses to third parties under Patent Rights (for so long as Licensee continues to be in compliance with Licensee's diligence obligations under this Agreement), other than (i) the rights reserved by The Regents for other educational and non-profit institutions under Paragraph 2.2, (ii) licenses already granted by The Regents during such one-year period, and (iii)

licenses granted by The Regents in accordance with the terms of option agreements, agreements to negotiate, or letters of intent that are entered by The Regents during such one-year period.

(b) If at the end of such one-year period, Licensee has not satisfied its diligence obligations (allowing for any extensions pursuant to Paragraph 6.3), then The Regents may, at its sole discretion, exercise its rights under Article 10.

6.4. All notices referenced in this Article 6 will be subject to Article 22 (Notices).

7. PROGRESS AND ROYALTY REPORTS

7.1. For the period beginning July 1, 2010, within sixty (60) days of each subsequent June 30 and December 31, Licensee will submit to The Regents a semi-annual progress report ("Progress Report") covering Licensee's activities related to the development and testing of all Licensed Products, Licensed Services and Licensed Methods and the obtaining of necessary governmental approvals, if any, for marketing in the United States. The Progress Reports will be made for all development activities until the first Sale occurs in the United States.

7.2. Each Progress Report will be a sufficiently detailed summary of activities of Licensee and any Sublicensees so that The Regents may evaluate and determine Licensee's progress in development of Licensed Products, Licensed Services, and Licensed Methods, and in meeting its diligence obligations under Article 6, and will include (but not be limited to) the following: summary of work completed and in progress; current schedule of anticipated events and milestones, including diligence milestones under Paragraph 6.2; anticipated market introduction dates for the Licensed Territory; and Sublicensees' activities during the reporting period.

7.3. In Licensee's Progress Report immediately subsequent to the first Sale of Licensed Products or Licensed Services by Licensee or a Sublicensee, Licensee will report the date of such first Sale.

7.4. After the first Sale of a Licensed Product or Licensed Service, Licensee will make semi-annual royalty reports ("Royalty Reports") to The Regents within two (2) months after the

calendar halves ending June 30 and December 31 of each year. Each Royalty Report will include at least the following:

(a) The nature and number of Licensed Products and Licensed Services Sold during the reporting period;

(b) Calculation of Net Sales for the period pursuant to Paragraph 1.10;

(c) Calculation of Net Royalty Revenues for the period pursuant to Paragraph 1.9;

(d) Calculation of total Earned Royalties due The Regents pursuant to Paragraph 5.1; and

(e) Names and addresses of any new Sublicensees along with a summary of the material terms of each new Sublicense Agreement entered into during the reporting period.

7.5. If no Sales of a Licensed Product or Licensed Service have occurred during the report period, a statement to this effect is required in the Progress Report or Royalty Report for that period.

8. BOOKS AND RECORDS

8.1. Licensee will keep full, true, and accurate books of accounts containing all particulars that may be necessary for the purpose of showing the amount of Earned Royalties payable to The Regents and Licensee's compliance with other obligations under this Agreement. Said books of accounts will be kept at Licensee's principal place of business or the principal place of business of the appropriate division of Licensee to which this Agreement relates. Said books and the supporting data will be open at all reasonable times during normal business hours upon reasonable notice, for two (2) years following the end of the calendar year to which they pertain, to the inspection and audit by representatives of The Regents for the purpose of verifying Licensee's royalty statement or compliance in other respects with this Agreement. Such representatives will be bound to hold all information in confidence except as necessary to communicate Licensee's non-compliance with this Agreement to The Regents.

8.2. The fees and expenses of The Regents' representatives performing such an examination will be borne by The Regents. However, if an error in underpaid Earned Royalties to The

Regents of more than ten percent (10%) of the total Earned Royalties due for any year is discovered, then the fees and expenses of these representatives will be borne by Licensee.

9. LIFE OF THE AGREEMENT

9.1. Unless otherwise terminated by the operation of law or by acts of the Parties in accordance with the terms of this Agreement, this Agreement will commence on the Effective Date and will remain in effect for the life of the last-to-expire patent or last-to-be-abandoned patent application licensed under this Agreement, whichever is later.

9.2. Any termination of this Agreement will not affect the rights and obligations set forth in the following articles:

Article 1	Definitions
Article 8	Books and Records
Article 9	Life of the Agreement
Article 12	Disposition of Licensed Products Upon Termination
Article 15	Use of Names and Trademarks
Article 16	Limited Warranties
Article 18	Indemnification
Article 22	Notices
Article 23	Payments
Article 25	Confidentiality
Article 28	Applicable Law; Venue; Attorneys' Fees
Article 29	Scope of Agreement

9.3. Any termination of this Agreement will not relieve Licensee of its obligation to pay any monies due or owing at the time of such termination and will not relieve any obligations, of either Party to the other Party, established prior to termination.

10. TERMINATION BY THE REGENTS

10.1. Except as otherwise provided in Article 6 (Diligence) of this Agreement, if Licensee should violate or fail to perform any term of this Agreement, then The Regents may give written notice of such default ("Notice of Default") to Licensee. If Licensee should fail to repair such default within sixty (60) days of the effective date of such notice, The Regents will have the right to terminate this Agreement and the licenses herein by a second written notice ("Notice of Termination") to Licensee. If a Notice of Termination is sent to Licensee, this Agreement will automatically terminate on the effective date of such notice. Such termination will not relieve Licensee of its obligation to pay any royalty or

license fees owing at the time of such termination and will not impair any accrued rights of The Regents. The aforementioned notices will be subject to Article 22 (Notices).

10.2. Notwithstanding Paragraph 10.1, this Agreement will terminate immediately, upon written notice given by The Regents in its sole discretion, if Licensee files a claim including in any way the assertion that any portion of The Regents' Patent Rights is invalid or unenforceable, where the filing of such claim is by the Licensee, by a third party on behalf of the Licensee, or by a third party at the written urging of the Licensee.

10.3. Notwithstanding Paragraph 10.1, this Agreement will terminate immediately, upon written notice given by The Regents in its sole discretion, in the event of the filing of a petition for relief under the United States Bankruptcy Code by or against Licensee as a debtor or alleged debtor.

11. TERMINATION BY LICENSEE

11.1. Licensee will have the right at any time to terminate this Agreement in whole or as to any portion of Patent Rights by giving notice in writing to The Regents. Such notice of termination will be subject to Article 22 (Notices) and, except as otherwise provided in Paragraph 13.4, termination of this Agreement (in whole or in part, as the case may be) will be effective sixty (60) days after the effective date of such notice.

11.2. Any termination pursuant to Paragraph 11.1 will not relieve Licensee of any obligation or liability accrued hereunder prior to such termination or rescind anything done by Licensee or any payments made to The Regents hereunder prior to the time such termination becomes effective, and such termination will not affect in any manner any rights of The Regents arising under this Agreement prior to such termination.

12. DISPOSITION OF LICENSED PRODUCTS UPON TERMINATION

12.1. Upon termination of this Agreement under Article 10 (Termination by The Regents) or Article 11 (Termination by Licensee) of this Agreement, for a period not to exceed three (3) years after the date of termination, Licensee may complete and Sell any partially made Licensed Products and continue to render any previously commenced Licensed Services, and continue the practice of Licensed Methods only to the extent necessary to do the foregoing; provided, that all such Sales will be subject to the terms of this Agreement

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

including, but not limited to, the payment of royalties at the rate and at the time provided herein and the rendering of reports thereon.

13. PATENT PROSECUTION AND MAINTENANCE

13.1. The Regents will diligently prosecute and maintain the United States and foreign patent applications and patents under Patent Rights, subject to Licensee's reimbursement of The Regents' out-of-pocket costs under Paragraph 13.3 below. The Regents will have sole responsibility for retaining and instructing patent counsel. The Regents will, however, promptly provide, subject to Article 25 (Confidentiality), Licensee with copies of all official patent office correspondence and other documentation relevant thereto so that Licensee may be informed of the continuing prosecution and may comment upon such correspondence sufficiently in advance of any initial deadline for filing a response; provided, however, if Licensee has not commented upon such documentation in reasonable time for The Regents to sufficiently consider Licensee's comments prior to the deadline for filing a response with the relevant government patent office, The Regents will be free to respond appropriately without consideration of Licensee's comments, if any.

13.2. The Regents will use reasonable efforts to prepare or amend any patent application within Patent Rights to include claims reasonably requested by Licensee and desirable to protect the Licensed Products or Licensed Services contemplated to be Sold or Licensed Methods to be practiced under this Agreement.

13.3. Subject to Paragraph 13.4, all costs actually incurred by The Regents during the term of this Agreement for prosecuting and maintaining, and if authorized by Licensee, for preparing and filing, all United States and corresponding foreign patent applications and resulting patents under Patent Rights ("Patent Prosecution Costs") which have not been previously paid by Licensee, will be paid by Licensee, so long as the licenses under Patent Rights granted to Licensee herein remain exclusive. The costs of all interferences, oppositions, reexaminations, and reissues will be deemed to be Patent Prosecution Costs and also will be borne by Licensee (but only to the extent authorized by Licensee and actually incurred by The Regents during the term of this Agreement). Licensee will reimburse The Regents for all eligible Patent Prosecution Costs within thirty (30) days following receipt of an itemized invoice from The Regents for Patent Prosecution Costs.

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

If, however, The Regents reduces the exclusive licenses granted herein to non-exclusive licenses pursuant to Paragraph 6.3, and The Regents grants additional license(s) to all or a portion of the Patent Rights, the costs of preparing, filing, prosecuting and maintaining such subsequently licensed patent applications and patents will be divided equally among the licensed parties from the effective date of each subsequently granted license agreement.

13.4. Subject to the limitations set forth in Paragraph 13.3, Licensee's obligation to underwrite and to pay all United States and foreign patent filing, prosecution, and maintenance costs for Patent Rights will continue for so long as this Agreement remains in effect, provided however, that Licensee may terminate its obligation to pay Patent Prosecution Costs with respect to any particular patent application or patent under Patent Rights in any or all designated countries upon written notice to The Regents stating that further Patent Prosecution Costs with respect to that particular patent application or patent are no longer authorized, and further provided that such Patent Prosecution Costs either have not been incurred by The Regents as of such written notice or, if incurred by The Regents subsequent to such written notice, are actually and necessarily incurred by The Regents as a result of Licensee's notice occurring too late to cancel actions or withdraw instructions to act previously authorized by Licensee. The Regents may continue prosecution and/or maintenance of such patent application(s) or patent(s) at its sole discretion and expense, provided, however, that Licensee will have no further rights or licenses thereto under such Patent Rights. Licensee's decision to terminate its rights with respect to any specific patent(s) and/or patent application(s) within the Patent Rights will not affect Licensee's continuing rights in the remainder of the Patent Rights.

13.5. Licensee will promptly inform The Regents of any change in Licensee's small entity status, as defined in 37 CFR 1.27, or of any Sublicense to an entity which does not have small entity status, as defined in 37 CFR 1.27. With respect to all patents and patent applications in Canada, if any, The Regents is hereby advised that Licensee does not wish to claim small entity status, irrespective of whether Licensee would qualify as a small entity under Canadian law. Moreover, with respect to all patents and patent applications in the United States, The Regents is hereby advised that Licensee does not wish to claim small entity status.

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

14. MARKING

14.1. Licensee will mark all Licensed Products Sold under this Agreement, or their containers, in accordance with applicable patent marking laws.

15. USE OF NAMES AND TRADEMARKS

15.1 This Agreement does not confer any right to use any name, trade name, trademark, or other designation of either Party or of Technion (including contraction, abbreviation or simulation of any of the foregoing) in advertising, publicity or other promotional activities. Such use of the name "The Regents of the University of California," or the name of any campus of the University of California, or the name and logo of Technion Research & Development Foundation Ltd, and/or the Technion — The Israel Institute of Technology, are prohibited.

16. LIMITED WARRANTIES

16.1. The Regents warrants that it has the lawful right to grant this license. As affirmed by Technion in the signature blocks below, Technion acknowledges and agrees that, by virtue of the Inter-institutional Agreement (which Technion has the right and authority to enter into), The Regents has the right to grant the exclusive license under this Agreement.

16.2. Licensee acknowledges The Regents' representation that, to the extent of the actual knowledge (as of the Effective Date) of The Regents' Executive Director of UC Davis InnovationAccess at the Davis campus, The Regents is not aware of any claim, action, proceeding or investigation, whether governmental or by a third party, pending or threatened, excluding any patent office proceeding, that questions the validity or enforceability of the Patent Rights, and that The Regents makes no warranty respecting the existence of any basis for any such claim, action, proceeding or investigation. Licensee acknowledges Technion's representation (which representation is affirmed by Technion in the signature blocks below) that, to the extent of the actual knowledge (as of the Effective Date) of Technion's Manager, Technion is not aware of any claim, action, proceeding or investigation, whether governmental or by a third party, pending or threatened, excluding any patent office proceeding, that questions the validity or enforceability of the Patent Rights, and that Technion makes no warranty respecting the existence of any basis for any such claim, action, proceeding or investigation.

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

16.3. Notwithstanding anything to the contrary in the foregoing Paragraphs 16.1 and 16.2, if Licensee becomes aware of any such third party right, dispute, claim, action, proceeding, or investigation after the Effective Date, Licensee may terminate this Agreement in accordance with Article 11 (Termination by Licensee) above.

16.4. Except as expressly set forth in Paragraphs 16.1 and 16.2 of this Agreement, the license granted and the associated Invention are provided WITHOUT WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR ANY OTHER WARRANTY, EXPRESSED OR IMPLIED. THERE IS NO REPRESENTATION OR WARRANTY BY THE REGENTS OR TECHNION THAT THE INVENTION, THE PATENT RIGHTS, LICENSED PRODUCTS, LICENSED SERVICES OR LICENSED METHODS WILL NOT INFRINGE ANY PATENT OR OTHER PROPRIETARY RIGHT.

16.5. IN NO EVENT WILL THE REGENTS OR TECHNION BE LIABLE FOR ANY INCIDENTAL, SPECIAL OR CONSEQUENTIAL DAMAGES RESULTING FROM EXERCISE OF THIS LICENSE OR THE USE OF THE INVENTION, THE PATENT RIGHTS, LICENSED METHODS, LICENSED SERVICES OR LICENSED PRODUCTS.

16.6. Nothing in this Agreement is or will be construed as:

(a) A warranty or representation by The Regents or Technion as to the validity, enforceability or scope of the Patent Rights; or

(b) A warranty or representation that anything made, used, or Sold under any license granted in this Agreement is or will be free from infringement of patents of third parties; or

(c) An obligation to bring or prosecute actions or suits against third parties for patent infringement, except as provided in Article 17; or

(d) Conferring by implication, estoppel, or otherwise any license or rights under any patents of The Regents or of Technion other than the Patent Rights, regardless of whether such patents are dominant or subordinate to the Patent Rights; or

(e) An obligation to furnish new developments, improvements, enhancements,

advancement to the Invention and/or related know-how, data or information which are not included in the patents and patent applications under the Patent Rights.

17. PATENT INFRINGEMENT

17.1. In the event that Licensee learns of the substantial infringement of any Patent Rights, Licensee will promptly provide The Regents with notice and reasonable evidence of such infringement ("Infringement Notice"). During the period and in a jurisdiction where Licensee has exclusive rights under this Agreement, neither Party will notify a third party, including the infringer, of the infringement without first obtaining consent of the other Party, which consent will not be unreasonably withheld. Both Parties will use diligent efforts, in cooperation with each other, to terminate such infringement without litigation.

(a) If such infringing activity has not been abated within ninety (90) days following the effective date of the Infringement Notice, Licensee may institute suit for patent infringement against the infringer. The Regents may voluntarily join such suit at The Regents' expense, but The Regents may not thereafter separately commence suit against the infringer for the acts of infringement that are the subject of Licensee's suit or any judgment rendered in that suit. Licensee may not join The Regents or Technion ("Owners") in a suit initiated by Licensee without The Regents' prior written consent. If, in a suit initiated by Licensee, an Owner is involuntarily joined other than by Licensee, Licensee will pay any costs incurred by an Owner arising out of such suit, including but not limited to, any fees actually and necessarily incurred by an Owner for legal counsel that an Owner selects and retains to represent it in the suit.

(b) If, within one hundred twenty (120) days following the effective date of the Infringement Notice, the infringing activity has not been abated and if Licensee has not brought suit against the infringer, The Regents may in its sole discretion institute suit for patent infringement against the infringer. If The Regents institutes such suit, Licensee may not join such suit without The Regents' consent and may not thereafter separately commence suit against the infringer for the acts of infringement that are the subject of The Regents' suit or any judgment rendered

in that suit.

17.2. Such legal action as is decided upon will be at the expense of the Party on account of whom suit is brought and all recoveries recovered thereby will belong to such Party, provided that legal action brought jointly by the Owners and Licensee and participated in by both will be at the joint expense of both the Owners and Licensee, and all recoveries will be allocated in the following order: (a) to each Owner and Licensee, reimbursement for its attorneys' costs, fees, and other related out-of-pocket expenses to the extent each Owner and Licensee paid for such costs, fees, and expenses until all such costs, fees, and expenses are consumed for each Owner and Licensee; and (b) any remaining amount shared jointly by both the Owners and Licensee in proportion to the share of expenses paid by each Owner and Licensee, provided that (i) in no event will The Regents' share be less than five percent (5%) of such remaining amount if The Regents is a party to the suit, and (ii) in no event will Technion's share be less than five percent (5%) of such remaining amount if Technion is a party to the suit.

17.3. Each Party will cooperate with the other Party in litigation instituted hereunder but at the expense of the party on account of whom suit is brought. Such litigation will be controlled by the party bringing the action, except that the Owners may be represented by counsel of their choice in any suit brought by Licensee.

17.4. Any agreement made by Licensee for the purposes of settling litigation or other dispute will comply with the requirements of Article 3 above. In no event may Licensee admit liability or wrongdoing on behalf of The Regents or Technion without The Regents' or Technion's prior written consent.

17.5. The Parties acknowledge that Technion has obligations to The Regents, with respect to any legal action to enforce Patent Rights, in accordance with the provisions of the Inter-Institutional Agreement.

18. INDEMNIFICATION

18.1. Licensee will indemnify, hold harmless, and defend The Regents and Technion, and their respective officers, employees, and agents; the sponsor(s) of the research that led to the Invention; and the inventors of any patents and patent applications under Patent Rights and their employers, against any and all claims, suits, losses, damages, costs, fees, and

expenses resulting from or arising out of exercise of this license or any Sublicense. This indemnification will include, but not be limited to, any product liability.

18.2. Licensee, at its sole cost and expense, will insure its activities in connection with any work performed hereunder and will obtain, keep in force, and maintain the following insurance:

(a) Commercial Form General Liability Insurance (contractual liability included) with limits as follows:

Each Occurrence	$	3,000,000
Products/Completed Operations Aggregate	$	3,000,000
Personal and Advertising Injury	$	3,000,000
General Aggregate	$	3,000,000

(b) If the above insurance is written on a claims-made form, it will continue for three (3) years following termination or expiration of this Agreement. The insurance will have a retroactive date of placement prior to or coinciding with the Effective Date of this Agreement; and

(c) Worker's Compensation as legally required in the jurisdiction in which Licensee is doing business.

18.3. The coverage and limits referred to in Subparagraphs 18.2(a) and 18.2(b) will not in any way limit the liability of Licensee under this Article 18. Upon the execution of this Agreement, Licensee will furnish The Regents with certificates of insurance evidencing compliance with all requirements, and Licensee will promptly notify The Regents of any material modification of the insurance coverages. Such certificates will:

(a) provide for thirty (30) days' (ten (10) days for non-payment of premium) advance written notice to The Regents of any cancellation of insurance coverages;

(b) indicate that The Regents and Technion have each been endorsed as an additional insured under the coverage described above in Paragraph l8.2; and

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

(c) include a provision that the coverage will be primary and will not participate with, nor will be excess over, any valid and collectable insurance or program of self-insurance maintained by The Regents or Technion.

18.4. The Regents will promptly notify Licensee in writing of (a) any claim or suit brought against The Regents for which The Regents intends to invoke the provisions of this Article 18, and (b) any claim or suit brought against Technion for which Technion has informed The Regents that Technion intends to invoke the provisions of this Article 18. Licensee will keep The Regents and Technion, respectively, informed of Licensee's defense of any claims pursuant to this Article 18.

19. COMPLIANCE WITH LAWS/EXPORT CONTROLS

19.1. Licensee will comply with all applicable international, national, state, regional, and local laws and regulations in performing its obligations hereunder and in Licensee's use, manufacture, Sale, or import of the Licensed Products or Licensed Services, or in Licensee's practice of Licensed Methods. The Licensee will observe all applicable United States and foreign laws and regulations governing the transfer to foreign countries of technical data related to Licensed Products, including without limitation with respect to the International Traffic in Arms Regulations (ITAR) and the Export Administration Regulations.

19.2. Licensee understands that The Regents is subject to United States laws and regulations (including the Arms Export Control Act, as amended, and the Export Administration Act of 1979), controlling the export of technical data, computer software, laboratory prototypes and other commodities, and The Regents' obligations to Licensee under this Agreement are contingent on and subject to compliance with such laws and regulations. The transfer of certain technical data and/or commodities may require a license from the cognizant agency of the United States Government and/or written assurances by Licensee that Licensee will not export such technical data and/or commodities to certain foreign countries without prior approval of such agency. The Regents neither represents that such a license will not be required nor that, if required, it will be issued.

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

20. GOVERNMENT APPROVAL OR REGISTRATION

20.1. If this Agreement or any associated transaction is required by the law of any nation to be either approved or registered with any governmental agency, Licensee will assume all legal obligations to do so. Licensee will notify The Regents if it becomes aware that this Agreement is subject to a United States or foreign government reporting or approval requirement. Licensee will make all necessary filings and pay all costs including fees, penalties, and all other out-of-pocket costs associated with such reporting or approval process.

21. ASSIGNMENT

21.1. This Agreement is personal to Licensee. Licensee may not assign or transfer this Agreement, except by merger or acquisition of all or substantially all of Licensee's business to which this Agreement relates or by operation of law, without The Regents' prior written consent, which consent will not be unreasonably withheld. For purposes of this Paragraph 21.1, The Regents will be deemed to have reasonable grounds for such withholding of consent in the event that being in contractual privity with the proposed assignee would be inconsistent with maintenance of The Regents' reputation and status as a public university, or in the event that the proposed assignee in the view of The Regents would not be technically or financially capable of properly carrying out its duties under this Agreement. If The Regents refuse to grant such consent, The Regents will provide to Licensee, with particularity and in writing, a full explanation of the reasons for refusing consent. This Agreement is binding upon and will inure to the benefit of The Regents, its successors and assigns.

22. NOTICES

22.1. Any notice required to be given to either Party under this Agreement will be deemed to have been properly given and to be effective:

(a) on the date of delivery if delivered in person;

(b) on the date of mailing if mailed by first-class certified mail, postage paid; or

(c) on the date of mailing if mailed by any global express carrier service that requires the recipient to sign the documents demonstrating the delivery of such notice or payment;

to the respective addresses given below, or to another address as designated in writing by the Party changing its address:

To The Regents:
UC Davis InnovationAccess
Technology Transfer Services
1850 Research Park Drive, Suite 100
Davis, CA 95618-6134
Attn.: Director (UC Case No.: 2005-095)

To Licensee:
Arcadia Biosciences, Inc.
202 Cousteau Place, Suite 200
Davis, CA 95616
Attn.: Eric J. Rey
President and CEO

22.2. Either Party may change its address upon written notice to the other Party.

23. PAYMENTS

23.1. Payments to The Regents will be made to the following address:

The Regents of the University of California
Innovation Alliances & Services
1111 Franklin Street, 5th Floor
Oakland, CA 94607-5200
Attention: Executive Director, Research Administration and Technology Transfer
Referring to: UC Case No. 2005-095

23.2. If monies owed to The Regents under this Agreement are not received by The Regents when due, Licensee will pay to The Regents interest charges at a rate of ten percent (10%) per annum. Such interest will be calculated from the date payment was due until actually received by The Regents. Such accrual of interest will be in addition to, and not in lieu of, enforcement of any other rights of The Regents related to such late payment. Acceptance of any late payment will not constitute a waiver under Article 24 (Waiver) of this Agreement.

24. WAIVER

24.1. The failure of either Party to assert a right hereunder or to insist upon compliance with any term or condition of this Agreement will not constitute a waiver of that right or excuse a similar subsequent failure to perform any such term or condition by the other Party. None of the terms and conditions of this Agreement can be waived except by the written consent of the Party waiving compliance.

25. CONFIDENTIALITY

25.1. Subject to Paragraphs 25.3, 25.4 and 25.5, each Party will hold the other Party's proprietary business and technical information, data, experimental results, financial information and reports, patent prosecution material, and other proprietary information, including the negotiated terms of this Agreement (collectively "Proprietary Information"), in confidence and against disclosure to third parties with at least the same degree of care as it exercises to protect its own data and information of a similar nature, provided that, The Regents may disclose Proprietary Information of Licensee (including reports under Article 7 and including other Proprietary Information of Licensee which is directly related to the Patent Rights or licensing thereof) to Technion under the confidentiality provision of the Inter-Institutional Agreement, or under other written confidentiality agreement between The Regents and Technion. This obligation will expire five (5) years after the termination or expiration of this Agreement.

25.2. Written Proprietary Information may be labeled or marked confidential or proprietary. If the Proprietary Information is orally disclosed, it may be reduced to writing or some other physically tangible form, marked and labeled as confidential or proprietary by the disclosing Party and delivered to the receiving Party after the oral disclosure. In no event, however, will absence of labeling or marking affect the proprietary nature of Proprietary Information or the confidentiality obligations of the receiving Party.

25.3. Nothing contained herein will in any way restrict or impair the right of Licensee or The Regents to use, disclose, or otherwise deal with any information or data which:

(a) at the time of disclosure to a receiving Party is available to the public or thereafter becomes available to the public by publication or otherwise through no act or omission of the receiving Party; or

(b) the receiving Party can show by written records was in its possession prior to the time of disclosure to it hereunder and was not acquired directly or indirectly from the disclosing Party; or

(c) is independently made available to the receiving Party without restrictions as a matter of right by a third party; or

(d) is independently developed by employees of the receiving Party who did not have access to the information disclosed by the disclosing Party; or

(e) is subject to disclosure under the California Public Records Act or other requirements of law.

25.4. Licensee and The Regents may disclose Proprietary Information to their employees, agents, consultants, and contractors, provided that such Parties have a need to know such Proprietary Information and are bound by a like duty of confidentiality as that found in this Article 25. In addition, Licensee will be free to disclose to potential Sublicensees the terms and conditions of this Agreement upon their request, provided such disclosure is made under a suitable confidentiality agreement. Further, The Regents will be free to release to the inventors and senior administrators employed by The Regents the terms and conditions of this Agreement upon their request. If such release is made, The Regents will inform such employees of the confidentiality obligations set forth above and will request that they do not disclose such terms and conditions to others. Should a third party inquire whether a license to Patent Rights is available, The Regents may disclose the existence of this Agreement and the extent of the grant in Articles 2 and 3 to such third party, but will not disclose the name of Licensee unless (a) Licensee has already made such disclosure publicly, (b) Licensee otherwise consents to such disclosure, or (c) such disclosure is required under the California Public Records Act or other requirements of law.

25.5. Licensee and The Regents may disclose Proprietary Information that is required to be disclosed (i) to a governmental entity or agency in connection with seeking any governmental or regulatory approval, governmental audit, or other governmental requirement, (ii) or otherwise by law, provided that the receiving Party uses commercially reasonable efforts to give the other Party sufficient notice of such required disclosure to

allow such other Party reasonable opportunity to object to, and to take legal action to prevent, such disclosure.

25.6. Licensee and The Regents agree to destroy or return to the disclosing Party Proprietary Information received from the other in its possession within fifteen (15) days following the effective date of termination of this Agreement. However, each Party may retain one copy of Proprietary Information of the other solely for archival purposes in non-working files for the sole purpose of verifying the ownership of the Proprietary Information, provided such Proprietary Information will be subject to the confidentiality provisions set forth in this Article 25. Licensee and The Regents agree to provide each other, within thirty (30) days following termination of this Agreement, with a written notice that Proprietary Information has been returned or destroyed.

26. FORCE MAJEURE

26.1. Except for Licensee's obligation to make any payments to The Regents hereunder, and subject to Paragraph 26.2, the Parties will not be responsible for any failure to perform due to the occurrence of any catastrophic or major events beyond their reasonable control that render their performance impossible or onerous, including, without limitation, accidents (environmental, toxic spill, etc.); acts of nature or natural disasters such as earthquakes, fires or floods; biological or nuclear incidents; casualties; governmental acts, orders, restrictions, laws, proclamations, edicts, ordinances, or regulations; war, riot,

or insurrection; acts of terrorism; strikes, lockouts, or other serious labor disputes; local, national, or state emergency; and power failure and power outages. When any such events have abated, the Parties' respective obligations hereunder will resume.

26.2. Either Party to this Agreement will have the right to terminate this Agreement upon thirty (30) days' prior written notice if either Party is unable to fulfill its obligations under this Agreement due to any of the causes specified in Paragraph 26.1 continuing for a period of one (1) year or longer.

27. SEVERABILITY

27.1. The provisions of this Agreement are severable, and in the event that any provision of this Agreement is determined to be invalid, illegal or unenforceable under any controlling body of law, such invalidity, illegality, or enforceability will not in any way affect the

validity or enforceability of the remaining provisions hereof, and this Agreement will be construed as if such invalid, illegal, and/or unenforceable provisions had never been contained herein.

28. APPLICABLE LAW; VENUE; ATTORNEYS' FEES

28.1. THIS AGREEMENT WILL BE CONSTRUED, INTERPRETED, AND APPLIED IN ACCORDANCE WITH THE LAWS OF THE STATE OF CALIFORNIA, excluding any choice of law rules that would direct the application of the laws of another jurisdiction, except that the scope and validity of any patent or patent application under Patent Rights will be determined by the applicable law of the country of such patent or patent application. Any legal action brought by the Parties relating to this Agreement will be conducted in San Francisco, California. The prevailing Party in any legal action under this Agreement will be entitled to recover its reasonable attorneys' fees in addition to its costs and necessary disbursements.

29. SCOPE OF AGREEMENT

29.1. Neither Party will use this Agreement as a basis to invoke the CREATE Act, 35 U.S.C. 103 (c) (2), without the written consent of the other Party.

29.2. This Agreement (and the Inter-Institutional Agreement) incorporates the entire agreement between the Parties with respect to the subject matter hereof and supersedes all previous communications, representations, agreements, or understandings, whether oral or written, between the Parties relating to the subject matter hereof, including, but not limited to, the Option Agreement.

29.3. Headings appear solely for convenience of reference. Such headings are not part of this Agreement and will not be used to construe it.

29.4. No amendment or modification of this Agreement will be valid or binding upon the Parties unless made in writing and signed by an authorized representative of each Party.

IN WITNESS WHEREOF, the Parties have executed this Agreement (and Technion has signed to confirm its review and acknowledgment as a third-party beneficiary under this Agreement, and to affirm its acknowledgment and agreement under Paragraph 16.1 and its representation under Paragraph 16.2) below in triplicate originals, or counterparts thereof, by their respective duly authorized officers or representatives.

THE REGENTS OF THE UNIVERSITY OF CALIFORNIA

By /s/ David R. McGee
David R. McGee
Executive Director, UC Davis InnovationAccess

Date July 2, 2010

ARCADIA BIOSCIENCES, INC.

By /s/ Eric J. Rey
Eric J. Rey
President and CEO

Date July 2, 2010

REVIEWED AND ACKNOWLEDGED, AND AFFIRMED AS TO TECHNION'S ACKNOWLEGEMENT AND AGREEMENT IN PARAGRAPH 16.1 AND TECHNION'S REPRESENTATION IN PARAGRAPH 16.2:

TECHNION RESEARCH & DEVELOPMENT FOUNDATION

By: /s/
(Signature)

Name:
(Please print)

Title: _____

Date: July 2, 2010

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

Exhibit 10.4

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

ASSIGNMENT AND ASSUMPTION OF CONTRACT

THIS ASSIGNMENT AND ASSUMPTION OF LICENSE AGREEMENT by and between Seaphire International, Inc. and The University of Toronto Innovations Foundation dated February 14, 2002 ("Assignment") is made this 2nd day of January 2003 by Seaphire International Inc., an Arizona corporation ("Assignor") to Arcadia Biosciences, Inc., an Arizona corporation ("Assignee").

For good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, Assignor hereby assigns, sells, transfers, sets over and unto Assignee all of Assignor's estate, right, title and interest in and to the License Agreement attached hereto, and Assignee hereby assumes and accepts such assignment.

By acceptance of this Assignment, Assignee hereby assumes the performance of all of the terms, covenants and conditions imposed upon Assignor under the Agreement including the obligation to make payments under the Agreement.

Assignee hereby agrees to indemnify, defend and hold harmless Assignor, its agents and its and their successors and assigns from and against any and all claims, losses, liabilities and expenses, including reasonable attorneys' fees, suffered or incurred by Assignor by reason of any breach by Assignee of any of its obligations under this Assignment or by reason of any breach by Assignee of any of its obligations under the License Agreement arising after the date of this Assignment.

In the event any party hereto institutes any action or proceeding against the other party with regard to this Assignment, the prevailing party in such action or proceeding shall be entitled to recover from the other party, all costs and expenses of the action or proceeding, including actual attorneys' fees, charges and costs, in addition to any other relief to which it may be entitled.

This Assignment shall be binding upon and inure to the benefit of the successors, assignees, personal representatives, heirs and legatees of all the respective parties hereto.

IN WITNESS WHEREOF, Assignor and Assignee have executed and delivered this Assignment as of the day and year first above written.

"ASSIGNOR	"ASSIGNEE"
Seaphire International, Inc. an Arizona corporation	Arcadia Biosciences, Inc. an Arizona corporation
By: /s/	By: /s/ Roy Hodges
Title:	Title: President

LICENSE AGREEMENT

THIS EXCLUSIVE LICENSE AGREEMENT is made this 14 day of February 2002 (the "Effective Date"), by and between:

THE UNIVERSITY OF TORONTO INNOVATIONS FOUNDATION, a corporation without share capital incorporated under the laws of the Province of Ontario whose full post office address is Suite 200, 243 College Street, Toronto, Ontario M5T 1R5, Canada **UTTF** (hereinafter "UTIF"),

-and-

SEAPHIRE INTERNATIONAL, INC. a company, having its business address at 4455 East Camelback Road, Suite B-200, Phoenix, Arizona 85018, (hereinafter "Seaphire").

-and-

EDUARDO BLUMWALD, MARIS APSE, GIL AHARON AND WAYNE SNEDDEN (hereinafter collectively "Owners" and each is an "Owner");

-and-

THE GOVERNING COUNCIL OF THE UNIVERSITY OF TORONTO, a corporation incorporated under a special act of the Ontario Legislature (hereinafter "the University").

WITNESSETH

WHEREAS, the Owners have made an invention and created (developed) know-how relating to genes for genetically engineering salt tolerance in plants, referred to herein as "Salt Tolerance Technology";

WHEREAS, at the time of inventing the Salt Tolerance Technology, Eduardo Blumwald was employed by the University, Maris Apse and Gil Aharon were students of the University, and Wayne Snedden was a post-doctoral fellow at the University;

WHEREAS, the University has assigned to the Owners its entire right, title and interest in and to the technology by an agreement in writing dated May 14, 1998;

WHEREAS, the Owners have, by an agreement dated March 2, 1998, granted to UTIF the sole and exclusive worldwide right to grant licenses in and to the Salt Tolerance Technology;

WHEREAS, UTIF and Owners have filed patent applications, namely a U.S. patent application having Serial No. 09/271,584 on March 18, 1999 and a PCT patent application having

Serial No. PCT/CA99/00219 on March 17, 1999 covering aspects of the Salt Tolerance Technology, UTTF having the sole and exclusive worldwide right to grant any and all licenses to the patent applications and any continuation, divisional, continuation-in-part, re-issue, and re-examination patent applications and resulting patents based thereon, as well as all corresponding foreign patents and patent applications claiming priority therefrom;

WHEREAS, Seaphire desires to acquire an exclusive license to make, have made, use and sell the Salt Tolerance Technology described in the patent applications within the field of use and within the Domestic Territory and Foreign Territory, and UTIF is willing to grant such a license under the terms and conditions set form hereafter,

NOW THEREFORE, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties hereby agree as follows:

1. Definitions.

1.1 "Bioremediation" as used herein shall mean removal of salt and other minerals or compounds from a substrate or solution by means of any transgenic organism. For example, Bioremediation could include turf grass used for land reclamation purposes or alfalfa used for water purification.

1.2 "Confidential Information" as used herein shall mean this Agreement and its terms and conditions, the Know-How and Technical Data, and any information, which is non-public, confidential or proprietary in nature, including, without limitation, business information, trade secrets, and any information related to the Licensed Technology, whether written, oral or in electronic form, provided that tangible materials are marked as confidential, and provided that information given orally is identified as confidential at the time of disclosure, and confirmed as confidential in writing within fifteen (15) days, but shall not include information that:

(a) is or becomes disclosed to the public other than as a result of any act by the receiving Party;

(b) is rightfully received from a third party without similar restriction and without breach of this Agreement;

(c) the receiving party is able to demonstrate, in writing, was known to it on a non-confidential basis before such information was disclosed to such Party by or on behalf of another Party; or

(d) was independently developed by a Party without the use of any of another Party's Confidential Information.

1.3 "Currency" as used herein in all statements of or references to dollar amounts in this Agreement are to lawful money of the United States.

1.4 "Disputes" means all disputes, differences, controversies, claims, counterclaims or other matters arising out of or in connection with this Agreement or the breach of it or in respect of any defined legal relationship associated with it or derived from it.

1.5 "Domestic Territory" shall mean the United States and its possessions.

1.6 "Enabling Technology" as used herein shall mean any technology owned by an arm's length third party that Seaphire determines, in its sole discretion, is required to effectively commercialize the Salt Tolerance Technology. For example, and without limitation, Enabling Technology includes gene expression promoter technology, methods for inserting genes and promoters into plants, and gene expression terminator technology.

1.7 "Field of Use" as used herein shall mean any and all uses for any and all plants, including transgenic plants, the products from which are sold or used for food, feed, industrial, therapeutic, and other uses, including use for the production of crops for the purpose of Bioremediation.

1.8 "Foreign Territory" shall mean all countries outside the United States and its possessions.

1.9 "Improvement" shall mean any modification in the structure, design, or any other aspect of the Invention, whether patentable or unpatentable, which depends upon the Invention for its use or effectiveness or which increases the effectiveness of the Invention, including, without limitation, any modification of a part, component, assembly or process or apparatus for the manufacturing thereof intended to perform or produce results similar to those performed or produced by those of the Invention which Improvement is owned by or licensed to or under an obligation of assignment to UTIF during the term of this Agreement.

1.10 "Invention" means the Salt Tolerance Technology to which UTIF owns exclusive licensing rights and which is described in the Licensed Patents, Technical Data or Know-How.

1.11 “Know-How” shall mean the general and specific knowledge, experience and information, whether or not in written or printed form, applicable to the design, manufacture, production, service and sale of the Invention.

1.12 “Licensed Product(s)” means gene(s) for genetically engineering salt tolerance in Plants, Plants expressing or containing such genes, or any product, compound or substance arising or derived from Plants expressing or containing such genes, or other compound or method, any of which (i) fall within the scope of any issued and unexpired patent claim(s) resulting from any of the patent applications based on the Licensed Technology that are enforceable in the jurisdiction in which Licensed Products are made, used, sold, or offered for sale, or which (ii) fall within the scope of any claims in patent applications based on the Licensed Technology that UTIF, the

Owners, and the University believe in good faith to be patentable, which claims are pending, but not yet issued, in the jurisdiction in which Licensed Products are made, used, sold, or offered for sale.

1.13 “Licensed Technology” means the technology which is the subject of U.S. patent application having serial No. 09/271,584 filed on March 18, 1999 and PCT patent application having Serial No. PCT/CA99/00219 filed on March 17, 1999, both having UTIF recorded as the sole and exclusive owner of any and all licensing rights to the patents, and directed to genes for achieving salt tolerance in plants, including transgenic plants, and including any continuation, divisional, continuation-in-part, re-issue, and re-examination patent applications and resulting patents based thereon, as well as all corresponding foreign patents and patent applications claiming priority from any of the foregoing, which are owned by or licensed to or under an obligation of assignment to UTIF during the term of this Agreement (the “Licensed Patents”).

1.14 “Net Sales” as used herein shall mean Seaphire’s collected gross sales of Licensed Products and any matter containing the Licensed Products, less the following:

(a) commissions paid to any third party and reasonable trade, quantity, or cash discounts, but with respect to any of the preceding adjustments, only insofar as actually allowed or paid in connection with the sale in question;

(b) credits or allowances, if any, given or made on account of rejection or return of defective Licensed Product; and

(c) sales taxes, excise taxes, and manufactured goods duties actually paid by Seaphire with respect to any Licensed Product.

1.15 “Parties” means UTIF, Owners, the University and Seaphire collectively, and “Party” means any of them.

1.16 “Plant” means any transgenic plant.

1.17 “Technical Data” means any and all documents in whatever form, including but not limited to writings, computer disks, computer tapes, and electronic records, containing design and technical information, engineering or production data, drawings, plans, specifications, techniques, methods, processes, trade secrets, reports, models, market research data, and any and all other material or matter used by or in possession of UTIF and the Owners and applicable to the design, manufacture, production, service and sale of the Invention.

1.18 “Royalty Revenue” as used herein shall mean the revenues realized by Seaphire from any royalty, continuing, or use-based payments relating to the Licensed Products.

1.19 “Sublicense Fees” as used herein shall mean any and all lump sum payments, cash consideration, non-cash consideration, and/or equity received as an initial, up-front

fee in exchange for granting any sublicense to the Licensed Products less any commissions associated with the grant of any sublicense that are paid to any third party, but shall not include any non-cash consideration which consists of license rights to Enabling Technology.

1.20 The following Appendices and Schedules form part of this Agreement and are:

Appendix A — Details of Prior Negotiations (to be provided after execution of this Agreement)

Appendix B — Technical Milestones

Appendix C — Research Plan

Schedule 1 — Dispute Resolution

2. Grants.

2.1 UTIF hereby grants to Seaphire the exclusive license under the Licensed Technology, Know-How, and Technical Data to make, have made, use, sell and otherwise commercialize Licensed Products for the Field of Use, including any Improvements, within the Domestic Territory and Foreign Territory, and

the unlimited right to sublicense the same to others.

2.2 UTIF shall furnish to Seaphire all Technical Data and Know-How owned by or in possession of UTIF which is applicable to the Invention and/or Licensed Products and further agrees to seek and provide to Seaphire any further Technical Data and Know How related to the Invention and/or Licensed Products which is in possession of the Owners.

2.3 UTIF agrees to keep Seaphire informed of any Improvements, and Seaphire shall have an exclusive right to license and sublicense such Improvements during the term of this Agreement, subject to the terms and conditions hereof.

2.4 Seaphire shall take no action to have any rights of Owners, the University, or UTIF in the Licensed Technology declared invalid or unenforceable and shall not assist any other party in taking such action.

3. Reserved Rights.

3.1 UTIF, on behalf of the Owners and the University, reserves a perpetual, royalty-free right and license:

a) to use any and all of the Licensed Technology, Know-How, Improvements, and Technical Data for the purpose of research and teaching; and

b) to publish or disclose any technical information and research results concerning the Invention in accordance with Paragraph 3.2 below.

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

3.2 UTIF and/or Owners will provide a copy of any proposed publication or disclosure to Seaphire for its review at least thirty (30) days before submission for publication or disclosure.

3.3 Any Improvements resulting from the Owner's use of the Licensed Technology, Know-How and/or Technical Data for research and teaching […*…].

3.4 Any rights to Improvements obtained by UTIF resulting from the University's use of the Licensed Technology, Know-How and/or Technical Data for research and teaching […*…].

3.5 Upon the written request of Seaphire received within twenty (20) days of the receipt of such proposed publication or disclosure by Seaphire, UTIF and/or Owners will, at the Seaphire's option:

a) delay publication up to thirty additional (30) days to allow the UTIF and/or Owners to secure intellectual property protection of any Licensed Technology that would be disclosed by such publication; and/or
b) delete any Confidential Information provided by Seaphire from the proposed publication or disclosure.

4. Sublicensing.

4.1 Subject to any obligations of confidentiality to third parties, UTIF shall provide Seaphire with information detailing UTIF's prior negotiations with other parties regarding the Licensed Technology. Such information will include party name and contact details, field of use discussed, and license terms discussed and will be attached to this Agreement as Appendix A.

4.2 Seaphire shall have the exclusive right to sublicense its rights hereunder, with no right of approval by UTIF, but will provide UTIF with advance notice of any discussions or negotiations with potential sublicensees and UTIF will have the option to attend all such discussions or negotiations as an observer at its own expense.

4.3 Seaphire agrees to provide UTIF with an executed copy of any sublicense agreement that is entered into by Seaphire upon execution of such license.

4.4 Seaphire is responsible for any and all activities of any sublicensee and the sublicensee shall adhere to all confidentiality and indemnity requirements set forth in this Agreement. Each sublicense granted by Seaphire shall require the sublicensee to indemnify Seaphire under provisions substantially equivalent to those of Section 12.2 of this Agreement. No term or condition of any sublicense granted by Seaphire shall be less favorable to UTIF than the terms and conditions of the license granted herein. The above limitation shall not be interpreted to apply to those economic consequences to UTIF inherent to a sublicense arrangement and accordingly addressed by the Royalty Revenue and Sublicense Fee sharing provisions of Paragraphs 6.3 and 6.4. Seaphire shall not, however, sublicense its rights hereunder for a royalty less than that specified in Paragraph 6.3 of this Agreement.

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

5. Representations and Obligations of UTIF and Owners.

5.1 UTIF and Owners covenant, represent and warrant, as of the Effective Date:

(a) that Owners have granted to UTIF the sole and exclusive right to grant any and all licenses to the Invention, including without limitation, Licensed Technology, Improvements, Technical Data and Know-How, relating thereto, in a written agreement dated March 2, 1998;

(b) that such Invention is the subject of currently pending U.S. and Canadian patent applications;

(c) that, to the best of UTIF's and Owners' knowledge, Seaphire's contemplated manufacture, use, sublicense and sale of the Licensed Products and the use of Technical Data and Know-How do not infringe the intellectual property rights of any third party, including any patent heretofore issued in the United States, and do not infringe upon or conflict with any other patents or applications for patents, including foreign patents and applications;

(d) that there is no other person, firm, corporation or other entity who has obtained from UTIF, the Owners or the University any license or right to license the Invention, Improvements, the Licensed Technology, the Technical Data and/or Know-How;

(e) that there are no outstanding options, licenses, or agreements, of any kind relating to the Invention or Licensed Technology or to the manufacture, use or sale of the Licensed Products, or Improvements to the Invention;

(f) that there have never been, and are hot currently, any disputes of any kind relating to the Invention or Licensed Technology or to the manufacture, use or sale of the Licensed Products, or Improvements to the Invention; and

(g) that UTIF and Owners have full right and power to grant the rights, licenses and privileges herein given.

5.2 UTIF warrants and agrees that any and all maintenance fees and/or annuities that have or may come due on the Licensed Patents which have already been filed and which are currently the subject of pending patent applications described in Paragraph 1.13 will be paid promptly within statutory time limits so that the Licensed Patents remain valid and enforceable at all times during the existence of this Agreement.

5.3 UTIF, OWNERS AND THE UNIVERSITY HEREBY EXPRESSLY DISCLAIM ANY OTHER WARRANTY, EXPRESS OR IMPLIED, CONDITION OR TERM OF ANY KIND RELATING TO THE LICENSED PRODUCTS, LICENSED TECHNOLOGY, TECHNICAL DATA, KNOW-HOW OR IMPROVEMENTS, INCLUDING, WITHOUT LIMITATION, ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE, ANYWARRANTY OF NON-INFRINGEMENT OF THIRD PARTY PATENT RIGHTS, ORANY WARRANTY OF PRODUCT PERFORMANCE OR OF SAFETY OF THE LICENSED

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

PRODUCTS. EXCEPT AS SPECIFICALLY STATED IN THIS AGREEMENT, THELICENSED TECHNOLOGY, TECHNICAL DATA, KNOW-HOW AND IMPROVEMENTS ARE LICENSED UNDER THIS AGREEMENT "AS-IS."

6. Royalties, Reports and Payments.

6.1 Seaphire shall pay to UTIF an initial technology access fee of [...*...] (the "Initial Access Fee") upon the signing of this Agreement.

6.2 Upon the achievement of certain technical milestones by Seaphire, the requirements for which are outlined and attached to this Agreement as Appendix B, Seaphire shall pay to UTIF specific technology milestone fees as follows:

(a) Technical Milestone No. 1 — Upon Seaphire [...*...] Seaphire shall pay UTIF a technology milestone fee of [...*...] ([...*...]) (the "Technical Milestone No. 1 Fee").

(b) Technical Milestone No. 2 - Upon Seaphire [...*...] Seaphire shall pay UTIF a technology milestone fee of [...*...] ([...*...]) (the "Technical Milestone No. 2 Fee").

(c) Technical Milestone No. 3 - Upon [...*...] Seaphire shall pay UTIF a technology milestone fee of [...*...] ([...*...]) (the "Technical Milestone No. 3 Fee").

(d) Technical Milestone No. 4 — Upon Seaphire [...*...] Seaphire shall pay UTIF a technology milestone fee of [...*...] ([...*...]) (the "Technical Milestone No. 4 Fee").

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

(e) Technical Milestone No. 5 — Upon obtaining United States Department of Agriculture (USDA) and United States Food and Drug Administration (USFDA) regulatory approval on any plant species incorporating the Invention, and namely the sodium antiport gene, Seaphire shall pay UTIF a technology milestone fee of [...*...] ([...*...]) (the 'Technical Milestone No. 5 Fee").

(f) Seaphire shall use reasonable efforts to market and sell the Licensed Products and to commercialize the Invention Seaphire shall provide funds to carry out the Research Plan set forth in Appendix C, subject to the terms of the specific research agreements pertaining thereto.

6.3 Beginning on the Effective Date and continuing until expiration of each of the patents relating to the Licensed Technology or until such patents covering Licensed Products are declared invalid by a court of final jurisdiction, or until such pending patent applications are abandoned without any possibility of revival or reinstatement, Seaphire shall pay to UTIF [...*...]%) of all Net Sales and Royalty Revenue realized by Seaphire from the sale of the Licensed Products. However, in the event that Seaphire is required to pay royalties on any Enabling Technology in order to realize sales or revenue from the Licensed Products, the percent of royalties paid to UTIF will be reduced according to amounts actually paid by Seaphire, with a maximum reduction of [...*...] percent [...*...]%). In the

event that Seaphire pays to a third party any other consideration apart from royalties to obtain Enabling Technology, the parties agree to negotiate in good faith to reach a fair value for such consideration with that value being recovered by Seaphire in the form of reduced royalty payments to UTIF.

6.4 In granting any sublicenses to the Licensed Products in which Sublicense Fees due upon issuance of the sublicense are received by Seaphire, Seaphire shall pay a percentage of the same to UTIF as follows:

(a) Seaphire shall pay UTIF [...*...] percent [...*...]%) of any initial Sublicense Fees for any sublicenses which result from Seaphire's grant of any sublicenses for use in turf grass or forage crops, or solely for purposes of Bioremediation, if such sublicenses) are executed within one (1) year from the Effective Date of this Agreement to any of those parties listed in Appendix A to this Agreement having had prior negotiations with UTIF with respect to those specific crops or solely for Bioremediation. Seaphire shall make reasonable efforts to enter into such sublicenses within one (1) year from the Effective Date of tins Agreement

(b) Seaphire shall pay UTIF [...*...]%) of any initial Sublicense Fees for any sublicenses which result from Seaphire's grant of any sublicense for use in any crops other than turf grass or forage crops, or for uses other than solely for purposes of Bioremediation, if such sublicense(s) are executed within one (1) year from the Effective Date of this Agreement to any of those parties listed in Appendix A to this Agreement. Seaphire shall make reasonable efforts to enter into such sublicenses within one (1) year from the Effective Date of this Agreement.

(c) Seaphire shall pay UTIF [...*...] percent [...*...]%) of any other initial Sublicense Fees for any sublicenses that it receives which do not fall within Paragraphs 6.4(a) and 6.4(b) of this Section.

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

6.5 If the patents relating to the Licensed Technology covering the Licensed Products expire or are declared invalid by a court of final jurisdiction in any given jurisdiction, or if the patents fail to issue in a particular jurisdiction, Seaphire is not required to pay any unpaid technology milestone payments provided for in Paragraphs 6.2 or 6.4 above, or the royalty provided for in Paragraph 6.3 above, in that jurisdiction.

6.6 In addition to any amounts payable by Seaphire to UTIF under Paragraphs 6.1-6.4, Seaphire shall pay any taxes applicable thereon which would be charged to Seaphire in accordance with the laws of Canada and its provinces, including, without limitation, any provincial sales tax or goods and services tax relating thereto. UTIF shall assist Seaphire in obtaining any and all applicable refunds of taxes paid.

6.7 Seaphire agrees to make written reports to UTIF semi-annually for the fiscal periods running from January 1 to June 30 and July 1 to December 31 of each year, stating in each such report the Net Sales. Royalty Revenue, and Sublicense Fees paid to Seaphire for the Licensed Products under the License herein granted during the period for which the report is rendered, such report to be made to UTIF within sixty (60) days following each such fiscal period.

6.8 Simultaneously with the making of each report provided for in Paragraph 6.6 of this section, Seaphire agrees to pay to UTIF the payments and royalty provided for in Paragraphs 6.2, 6.3 and 6.4 of this Section with respect to the Net Sales, Royalty Revenue and Sublicense Fees paid to Seaphire for the Licensed Products during the period covered by such report.

6.9 UTIF and Seaphire shall provide to each other quarterly reports on progress relating to the Inventions, their commercialization, market prospects, and other matters of mutual interest.

7. Keeping Records.

7.1 Seaphire agrees to keep records of its and its sublicensees' manufacture, use or sale of Licensed Products for a period of seven (7) years following such manufacture, use, or sale with respect to which payments hereunder are to be made to UTIF in sufficient detail to enable payments hereunder by Seaphire to be determined, and further agrees to permit its books and records to be examined from time to time to the extent reasonably necessary to verify the reports provided for in Section 6, provided that reasonable advance notice is given by UTIF, with such examination to be made at the expense of UTIF by any auditor appointed by UTIF who is acceptable to Seaphire, such acceptance which is not to be unreasonably withheld. In the event that any such examination shows an underpayment of more than ten percent (10%) with respect to any examined period, Seaphire shall bear all reasonable costs of such examination and shall promptly remit the underpayment to UTIF.

8. Term and Termination.

8.1 Unless otherwise terminated as set forth herein, this Agreement shall continue in force until the expiration date of the last issued patent relating to the Licensed Products.

8.2 UTIF shall have the right to terminate this Agreement, upon sixty (60) days written notice to Seaphire if Seaphire fails or refuses to make any payments hereunder (except in the event

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

that Seaphire in good faith believes that UTIF has breached any of its obligations under this Agreement and has given UTIF written notice thereof, or in the event that there is a noticed Dispute between the Parties with respect to any amounts owed by Seaphire, and in either case the disputed payment amount may be withheld), fails to make reasonable efforts to market and sell the Licensed Products or to commercialize the Licensed Technology, fails to provide funding for the Research Plan set forth in Appendix C in accordance with the terms of any agreements pertaining thereto, or materially defaults in the performance of any of its other obligations set form in this Agreement, unless all material defaults specified have been substantially cured within such sixty (60) day period.

8.3 In the event of any termination of this Agreement by UTIF pursuant to Paragraph 8.2 above, Seaphire shall continue to have a non-exclusive license to make, have made, use, and sell Licensed Products for a period of six (6) months thereafter, to permit Seaphire to complete any then-existing contracts for the manufacture of Licensed Products and disposal of any inventory of Licensed Products. Any such sale or other disposition of licensed Products will be subject to the payment provided for under this Agreement. Following such six (6) month period, Seaphire shall totally cease all further manufacture, use, having made and sale of Licensed Products.

8.4 This Agreement and the rights granted hereunder shall terminate immediately and revert automatically to UTIF in the event of any order made or effective resolution passed for the winding-up, liquidation or dissolution of Seaphire, or if Seaphire ceases or threatens to cease to carry out its business, or if Seaphire commits or threatens to commit an act of bankruptcy or becomes insolvent or makes a sale of the whole or part of its assets in bulk, or if bankruptcy or insolvency proceedings are instituted relating to Seaphire, or if a receiver or receiver/manager is appointed for Seaphire, or if an assignment is made for the benefit of Seaphire's creditors. Such termination shall not impair or prejudice any other right or remedy that UTIF may otherwise have under this Agreement.

8.5 Termination or expiration of this Agreement for any reason shall not relieve Seaphire of any obligations to make payments under Section 6 that were payable as of the effective date of termination or expiration.

9. Dispute Resolution and Arbitration.

9.1 The objectives of this Section 9 are to attempt to resolve all Disputes arising between the Parties as fairly, efficiently and cost effectively as possible. The Parties may agree to vary the provisions of this Section 9 as they consider appropriate in order to respond with flexibility to any unique aspects of a Dispute. Otherwise, the provisions of this Section 9 shall apply.

9.2 Notice of a Dispute by a Party must be delivered to the other Parties in accordance with the notice provisions of this Agreement. Within ten (10) days after delivery of the notice of Dispute, a senior representative of each of the Parties to the Dispute who has not been personally involved in discussions relating to the Dispute who have full authority to settle the Dispute, shall meet at mutually acceptable times and places as often as they consider necessary, to make efforts in good faith to resolve the dispute by amicable negotiations within a further fourteen (14) day period The negotiations shall be construed as settlement discussions and shall be conducted on a "without prejudice" basis. In the event that such discussions fail to resolve the Dispute, the Parties shall

jointly select a mediator who shall mediate the Dispute for a further sixty (60) days. In the event the Parties cannot mutually agree on a mediator within twenty (20) days or there is no resolution of the Dispute within sixty (60) days of selection of a mediator, any Party may refer the Dispute immediately to arbitration under Paragraph 9.4.

9.3 If one of the Parties refuses or neglects to participate in the amicable negotiations, any other party may refer the Dispute immediately to arbitration under Paragraph 9.4.

9.4 The arbitration shall be governed by the Rules of Procedure set out in Schedule 1. It shall be a condition precedent to the bringing of any legal proceedings that are contemplated by the Rules of Procedure that the Parties will have concluded the arbitration process as provided by the Rules of Procedure. The provisions of the *Arbitration Act, 1991* (Ontario) shall apply to the extent mat they are not inconsistent with this Section 9 or with such Rules of Procedure.

9.5 If a Dispute is not resolved pursuant to Paragraph 9.2 within such fourteen (14) day period, such Dispute shall be submitted to arbitration in accordance with the provisions of this Paragraph 9.4 under the laws of Ontario.

9.6 The provisions of this Section 9 shall survive termination or expiration of this Agreement.

10. Confidentiality.

10.1 Confidential Information is the property of the Party disclosing it, and the ownership of any and all right, title and interest therein, including all intellectual property rights, shall at all times remain exclusively vested in the disclosing party.

10.2 Throughout the term of this Agreement, each Party shall use reasonable and prudent precautions to prevent disclosure of the other Parties' Confidential Information to unauthorized persons. A Party may disclose Confidential Information only to persons with a "need to know" who have written obligations of confidentiality under terms which are at least as stringent as ones agreed between the Parties, and the Confidential Information shall only be used to carry on or facilitate business as contemplated under this Agreement.

10.3 A Party may disclose another Parry's Confidential Information pursuant to the requirements of a government agency or pursuant to a court order, provided that the Party shall take all reasonable steps, including, but not limited to, the seeking of an appropriate protective order, to preserve the confidentiality of the information provided.

10.4 If this Agreement is terminated for any reason, any Parry in receipt of another Party's Confidential Information shall promptly deliver or destroy all Confidential Information of the disclosing Party without retaining copies thereof, except where such copies are required for audit inspection or legal proceeding arising from this Agreement. The provisions of this Section 10 shall survive termination or expiration of this Agreement for a period often (10) years.

11. Infringements.

11.1 Upon learning of any possible infringement by any third party of any claim involving the Licensed Patents, each party shall promptly notify the other, in writing, with details of the possible infringement. At its sole discretion, UTIF will take any steps necessary, at its expense, to eliminate such infringement, including the commencement of legal action, if necessary. UTIF may also, in its sole discretion, defend the Licensed Patents against any claims of invalidity.

11.2 In the event that UTIF fails to take action to eliminate infringement by any third party or is unable to enforce its rights against such a third party, Seaphire may elect to pay UTIF for the cost of taking such action to enforce its rights or Seaphire may take direct action to enforce the Licensed Patents. If Seaphire pays the costs for enforcing the Licensed Patents or elects to take direct action in enforcing the Licensed Patents, Seaphire may recover such costs by crediting them against any sublicense fees and royalties owed to UTIF without limitation. In the event Seaphire takes direct action to enforce the Licensed Patents and is awarded money damages, costs, and/or attorneys' fees, Seaphire shall reimburse UTIF for all costs previously credited against sublicense fees and royalties, such reimbursement not to exceed the total amount of the monetary award. Seaphire shall be entitled to all money damages, costs, and/or attorneys' fees awarded to it that exceed the total costs previously credited against sublicense fees and royalties.

11.3 The Parties agree that if a Party brings an infringement suit pursuant to this Section, the other Parties shall join as plaintiffs, if requested, and shall cooperate and assist in the preparation and prosecution of the suit.

12. Indemnity.

12.1 Seaphire shall indemnify and hold harmless Owner(s) UTIF and the University and their servants, agents, officers, directors and stock-holders from and against any and all claims, threats, loss, liability, damage or expense, including reasonable attorneys' fees, by reason or arising out of any acts or failure to act by or out of any use of Licensed Technology, Know-How, Technical Information, or Licensed Products by sublicensees or by Seaphire or its servants, agents, officers, directors, stockholders, employees, or customers. The Party seeking indemnification shall give Seaphire prompt notification of any such claim, threat, loss, liability, damage or expense. The indemnity provided herein shall survive any termination or assignment of this Agreement without time limit.

12.2 Each of the Owner(s), UTIF and the University (the "First Party") shall, severally and not jointly, indemnify and hold harmless Seaphire and its servants, agents, officers, directors and stock-holders from and against any and all claims, threats, loss, liability, damage or expense, including reasonable attorneys' fees, by reason or arising out of any acts or failure to act by or out of any use of Licensed Technology, Know-How, Technical Information, or Licensed Products by such First Party or its servants, agents, officers, directors, stockholders, employees, or customers. Seaphire shall give the First Party prompt notification of any such claim, threat, loss, liability, damage or expense. The indemnity provided herein shall survive any termination or assignment of this Agreement without time limit.

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

13. Insurance.

13.1 Seaphire, at its own expense and at all times during the term of this Agreement, shall carry and maintain in full force and effect comprehensive general liability insurance, including product liability provisions, in a form and with a carrier satisfactory to UTIF. The limits of such policy shall be One Million Dollars ($1,000,000) for each occurrence unless UTIF specifically agrees in writing to such lesser amount. Upon the reasonable request of UTIF, the amount of insurance coverage shall be increased. At its discretion, UTIF may defer this request for a maximum of sixty (60) days from the signing of this Agreement.

13.2 The coming into force of this Agreement is conditional upon UTIF having received a certificate of insurance from the insurance company, in a form acceptable to UTIF. The condition in the previous sentence is for the sole benefit of UTIF and UTIF may, in its sole discretion, waive the condition. Such policy shall contain an endorsement by the insurer providing that it shall not be cancelled or amended without thirty (30) days prior notice to UTIF. Licensee shall provide a certificate of such insurance to UTIF annually hereafter on the anniversary date of this Agreement.

14. Assignment.

14.1 On prior written notice to the other Parties, Seaphire may transfer all rights and duties under this Agreement to any third party assignee (the "Assignee"), provided that the Assignee shall expressly assume all of the obligations and liabilities of Seaphire under this Agreement, including, without limitation, the obligation to make any payments arising under Section 6 of this Agreement.

15. Patent Applications.

15.1 Seaphire shall have the right to inspect, review and revise all patent applications filed on the Invention and Improvements licensed hereunder. UTIF agrees to share all information regarding its patent strategy with Seaphire and to solicit input from Seaphire regarding the same.

15.2 Where UTIF has the right to do so, UTIF shall pursue expanding its patent rights and will file new PCT patent application(s) to include additional international coverage.

15.3 The fees and costs associated with any new application(s) filed by UTIF within one (1) year of the date of this Agreement shall be paid by UTIF. After one year from the date of this Agreement, all costs and fees associated with all patents and patent applications, except those patent applications having Serial Nos. 09/271,584 and PCT/CA99/00219, shall be paid by Seaphire, but will be credited against future sublicense fees and royalties owed to UTIF pursuant to Section 6 at a rate not to exceed [...*...]%) of the total fees and royalties owed to UTIF by Seaphire in any one year. Any credits exceeding the [...*...] limitation in any given year will carry forward to subsequent years.

15.4 With respect to any Improvement(s) licensed hereunder, if UTIF declines to file and prosecute an application to obtain a patent on such Improvements), then Seaphire may file or take over the prosecution of any such patent application(s) and the reasonable costs and fees associated with such patent application(s) will be credited against future sublicense fees and royalties owed to UTIF pursuant to Section 6 at a rate not to exceed [...*...]%) of the total fees and royalties

owed to UTIF by Seaphire in any one year. Any credits exceeding the […*…] percent […*…] limitation in any given year will carry forward to subsequent years.

15.5 With respect to improvements developed by or acquired by Seaphire, Seaphire shall be the sole owner of such improvements and any patents on such improvements. Further, any such patents will not be considered to be Licensed Technology and/or Licensed Products which are licensed under this Agreement.

16. Limitation of Liability.

16.1 UNDER NO CIRCUMSTANCE WILL ANY PARTY BE LIABLE TO ANY OTHER PARTY FOR INDIRECT, INCIDENTAL, CONSEQUENTIAL, SPECIAL OR EXEMPLARY DAMAGES (EVEN IF THAT PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES) ARISING FROM BREACH OF THIS AGREEMENT, THE USE OR INABILITY TO USE THE INVENTION OR ARISING FROM ANY OTHER PROVISION OF THIS AGREEMENT, SUCH AS, BUT NOT LIMITED TO, LOSS OF REVENUE OR ANTICIPATED PROFITS OR LOST BUSINESS (COLLECTIVELY "DISCLAIMED DAMAGES"), PROVIDED THAT EACH PARTY WILL REMAIN LIABLE TO THE OTHER PARTY TO THE EXTENT ANY DISCLAIMED DAMAGES ARE CLAIMED BY A THIRD PARTY AND ARE SUBJECT TO INDEMNIFICATION PURSUANT TO SECTION 12.

16.2 EXCEPT AS PROVIDED IN SECTION 12, NO PARTY WILL BE LIABLE TO THE OTHER PARTY FOR MORE THAN THE GREATER OF (i) TWO HUNDRED FIFTY THOUSAND DOLLARS ($250,000.00), OR (ii) AN AMOUNT EQUAL TO THE AMOUNTS PAID BY SEAPHIRE TO UTIF PURSUANT TO THIS AGREEMENT IN THE TWELVE (12) MONTHS PRECEDING THE CLAIM OR CLAIMS.

17. Miscellaneous.

17.1 This Agreement constitutes the entire understanding and Agreement of and between the Parties with respect to the subject matter hereof and supersedes all prior representations and agreements.

17.2 This Agreement cannot be modified or varied by any oral agreement or representation or otherwise than in a writing executed by both Parties.

17.3 Any payment, demand, notice, or other communication to be given in connection with this Agreement will be giving in writing and will indicate to the recipient that it is a payment, demand, notice, or other communication under this Agreement and will be given by personal delivery, by registered mail, and/or by fax addressed to the recipient as follows:

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

If to UTIF:
C.E.O.
University of Toronto
Innovations Foundation
243 College Street, Suite 200
Toronto, Ontario
Canada
M5T 1R5

If to Seaphire:
Mr. Eric Rey
Seaphire International
4455 East Camelback Road, Suite B-200
Phoenix, Arizona 85018

If to Owner(s):

Dr. Eduardo Blumwald
[…*…]

Dr. Maris P. Apse
[…*…]

Dr. Gilad S. Aharon
[…*…]

Dr. Wayne Snedden
[…*…]

If to the University:
Assistant Vice President of Research-Technology Transfer
27 King's College Circle
Simcoe Hall, Room 133S
Toronto, Ontario
Canada
M5S 1A1

Or to any such address, individual, or fax number as may be designated by notice given by any Party to the other Parties. Any demand, notice, or other communication given by personal delivery will be conclusively deemed to have been given on the day of actual delivery thereof and, if given by registered mail, on the fifth business day following the deposit thereof in the mail, and if given by fax, on the day of transmittal thereof if given during the normal business hours of the recipient on a business day and on the business day during which such normal business hours next occur if not given during such hours on any day. If the Party giving any demand, notice, or other communication knows or ought reasonably to know of any difficulties with the postal system that might affect the delivery of mail, any such demand, notice or other communication may not be mailed but must be given by personal delivery or by fax.

17.4 Failure of any Party to insist upon strict performance of any of the covenants, terms, or conditions of this Agreement shall not be deemed to be a waiver of any other breach or default in the performance of the same or any other covenant, term or condition contained in this Agreement.

17.5 This Agreement is governed by and will be construed in accordance with the laws of the province of Ontario and the laws of Canada applicable therein, except the laws enacting the United Nations Convention on Contracts for the International Sale of Goods, 1988. The Parties attorn to the exclusive venue and jurisdiction of the Courts of Ontario, and waive any arguments under the conflict of laws removing such exclusive venue, jurisdiction or governing law.

17.6 The waiver of any breach of this Agreement by any Party will in no event constitute a waiver of any future breach, whether similar or dissimilar in nature.

17.7 The headings of the clauses in this Agreement are inserted for convenience only and are not intended to affect the meaning or interpretation of this Agreement.

17.8 If performance of this Agreement is hindered or prevented by an act of God, action of the elements, fire, labor disturbances, failure or lack of transportation and/or facility, shortage or labor, material, or supplies, interruption of power or water, war, invasion, civil unrest, enactment of legislation or issuance of governmental orders or regulations, or other casualty or cause, whether similar or dissimilar, beyond either Party's control, performance by either Party to the extent so hindered or prevented will be excused.

17.9 This Agreement is the result of negotiations by and between the Parties, with each Party being represented by legal counsel. It is agreed that in the event any dispute arises under this Agreement, strict construction of the terms of this Agreement shall not be adopted against any Party by reason of that Party having drafted or prepared this Agreement, it being acknowledged that all Parties participated in the preparation of this Agreement.

17.10 Time shall be of the essence in all aspects of this Agreement.

17.11 UTIF and Seaphire shall jointly agree on any press release disclosing any aspect of this Agreement or any of its details.

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

17.12 The following provisions shall survive any termination of this Agreement: Section 1; Paragraphs 3.1, 5.3, and 7.1; Sections 9, 10, 12, and 16.

17.13 In the event that any clause of this Agreement is deemed unenforceable, the remaining clauses of the Agreement shall remain in full force and effect and the Parties shall negotiate in good faith to replace the unenforceable clause with a clause having substantially the same economic effect for the Parties.

17.14 Words importing the singular number only shall include the plural and vice versa, and words importing the masculine gender shall include the feminine and neuter genders and vice versa.

17.15 This Agreement may be executed in one or more counterparts, each of which shall be deemed to be an original and all of which together shall constitute one and the same instrument. For the purposes of this Agreement and all other documents and agreements contemplated by this Agreement, the signature of any Party hereto or thereto evidenced by a telecopy showing such signature shall constitute conclusive proof for all purposes of the signature of such Party to this Agreement or those other documents and agreements, as the case may be.

IN WITNESS WHEREOF, the Parties hereto have caused the execution of this Agreement at the date first above written.

UTIF

By George Adams /s/ George Adams Date Feb 15, 2002

Title CEO
{I have authority to bind the corporation}

SEAPHIRE INTERNATIONAL

By Roy Hodges /s/ Roy Hodges Date 2/14/02

Title President and CEO
{I have authority to bind the corporation}

OWNERS

By Eduardo Blumwald /s/ Eduardo Blumwald Date Feb/19/02

By Maria Apse /s/ Maria Apse Date Feb 19/2002

By Gil Aheron /s/ Gil Aheron Date Feb. 20/2002

By Wayne Snedden /s/ Wayne Snedden Date February 19, 2002

THE GOVERNING COUNCIL OF THE UNIVERSITY OF TORONTO

By /s/ Date Feb. 19, 2002

Title Ass't Vice President
{I have authority to bind the corporation}

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

Schedule 1

Rules of Procedure for Arbitration

The following rules and procedures shall apply with respect to any matter to be arbitrated between Parties under the terms of the Agreement.

1. INITIATION OF ARBITRATION PROCEEDINGS

(a) If any Party to this Agreement wishes to have any matter under the Agreement arbitrated in accordance with the provisions of this Agreement, it shall give notice (an "Arbitration Notice") to each other Party specifying particulars of the matter or matters in dispute and proposing the name of the person it wishes to be the single arbitrator. If a Party has no financial or other interest in a dispute, it may so notify the first Party and thereafter it shall not participate in the arbitration of the dispute and shall not be a "Respondent" as defined below and actions may be taken with respect to such dispute, without notice to or the consent of such non-interested Party. Within fifteen (15) days after receipt of the Arbitration Notice, the other Parties shall give notice to the first Patty advising whether such other Parties accept the arbitrator proposed by the first Party. If such notice is not given by all other Parties within such fifteen (15) day period, the other Parties shall be deemed to have accepted the arbitrator proposed by the first Party. If the Parties do not agree upon a single arbitrator within such fifteen (15) day period, any Party may apply to a judge of the Ontario Court, General Division under the *Arbitration Act, 1991*, S.O.1991, chap. 17, (the "Arbitration Act") for the appointment of a single arbitrator (the "Arbitrator").

(b) The individual selected as Arbitrator shall be qualified by education and experience to decide the matter in dispute. The Arbitrator shall be at arm's length from all of the Parties and shall not be a member of the audit or legal firm or firms who advise any Party, nor shall the Arbitrator be an individual who is, or is a member of a firm, otherwise regularly retained by any of the Parties.

2. SUBMISSION OF WRITTEN STATEMENTS

(a) Within twenty (20) days of the appointment of the Arbitrator, the Party initiating the arbitration (the "Claimant") shall send the other Parties (the "Respondents") a Statement of Claim setting out in sufficient detail the facts and any contentions of law on which it relies, and the relief that it claims.

(b) Within, twenty (20) days of the receipt of the Statement of Claim, the Respondents shall send the Claimant a Statement of Defense stating in sufficient detail which of the facts and contentions of law in the Statement of Claim which the Respondents admit or deny, on what grounds, and on what other facts and contentions of law the

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

Respondents rely.

(c) Within twenty (20) days of receipt of the Statement of Defense, the Claimant may send the Respondents a Statement of Reply.

(d) All Statements of Claim, Defense and Reply shall be accompanied by copies (or, if they are especially voluminous, lists) of all essential documents on which the Party concerned relies and which have not previously been submitted by any Party, and (where practicable) by any relevant samples.

(e) After submission of all the Statements, the Arbitrator will give directions for the further conduct of the arbitration.

3. MEETINGS AND HEARINGS

(a) The arbitration shall take place in the Municipality of Metropolitan Toronto, Ontario or in such other place as the Claimant and the Respondents shall agree upon in writing. The arbitration shall be conducted in English unless otherwise agreed by such Parties and the Arbitrator. Subject to any adjournments which the Arbitrator allows, the final hearing will be continued on successive working days until it is concluded.

(b) All meetings and hearings will be in private unless the Parties otherwise agree.

(c) Any Party may be represented at any meetings or hearings by legal counsel.

(d) Each Party may examine, cross-examine and re-examine all witnesses at the arbitration.

4. THE DECISION

(a) The Arbitrator will make a decision in writing and, unless the Patties otherwise agree, will set out reasons for decision in the decision.

(b) The Arbitrator will send the decision to the Parties as soon as practicable after the conclusion of the final hearing, but in any event no later than sixty (60) days thereafter, unless that time period is extended for a fixed period by the Arbitrator on written notice to each Party because of illness or other cause beyond the Arbitrator's control.

(c) The provisions of this Agreement and this Schedule requiring the determination of certain disputes of arbitration shall not operate to prevent recourse to the court by any Party as permitted by the Arbitration Act (Ontario) with respect to injunctions, receiving orders and orders regarding the detention, preservation and inspection of property, or whenever enforcement of an award by the sole arbitrator reasonably

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

requires access to any remedy which an arbitrator has no power to award or enforce. In all other respects an award by the sole arbitrator or arbitrators, as the case may be shall be final and binding upon the Parties and there shall be no appeal from the award of the arbitrator or arbitrators as the case may be on a questions of law or any other questions provided that the Arbitrator has followed the rules provided herein in good faith and has proceeded in accordance with the principles of natural justice.

5. JURISDICTION AND POWERS OF THE ARBITRATOR

(a) By submitting to arbitration under these Rules, the Parties shall be taken to have conferred on the Arbitrator the following jurisdiction and powers, to be exercised at the Arbitrator's discretion subject only to these Rules and the relevant law with the object of ensuring the just, expeditious, economical and final determination of the dispute referred to arbitration.

(b) Without limiting the jurisdiction of the Arbitrator at law, the Parties agree that the Arbitrator shall have jurisdiction to:

(i) determine any question of law arising in the arbitration;

(ii) determine any question as to the Arbitrator's jurisdiction;

(iii) determine any question of good faith, dishonesty or fraud arising in the dispute;

(iv) order any Party to furnish further details of that Party's case, in fact or in law,

(v) proceed in the arbitration notwithstanding the failure or refusal of any Party to comply with these Rules or with the Arbitrator's orders or directions, or to attend any meeting or hearing, but only after giving that Party written notice that the Arbitrator intends to do so;

(vi) receive and take into account such written or oral evidence tendered by the Parties as the Arbitrator determines is relevant, whether or not strictly admissible in law;

(vii) make one or more interim awards;

(viii) hold meetings and hearings, and make a decision (including a final decision) in Ontario or elsewhere with the concurrence of the Parties thereto;

(ix) order the Parties to produce to the Arbitrator, and to each other for inspection, and to supply copies of, any documents or classes of documents in their possession or power which the Arbitrator determines to be relevant;

(x) order the preservation, storage, sale or other disposal of any property or thing under the control of any of the Parties;

(xi) to make an award of interest in respect of any amount determined to be owing;

(xii) make an award as to costs of the arbitration; and

(xiii) make interim orders to secure all or part of any amount in dispute in the arbitration.

6. COSTS OF ARBITRATION

The Parties to the Dispute shall jointly pay and be responsible for the costs of the arbitration. However the Arbitrator may make an award of costs upon the conclusion of the arbitration making one or more Parties to the Dispute liable to pay the costs of another Party to the Dispute.

7. ARBITRATION ACT, 1991

The rules and procedures of the Arbitration Act shall apply to any arbitration conducted hereunder except to the extent that they are modified by the express provisions of these Rules of Arbitration.

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

AMENDED AND RESTATED

LICENSE AGREEMENT

Between

ROSS PRODUCTS DIVISION OF ABBOTT LABORATORIES

And

ARCADIA BIOSCIENCES, INC.

Dated

JULY 25, 2007

TABLE OF CONTENTS

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

LICENSE AGREEMENT

This Amended and Restated Agreement, made and effective as of July 25, 2007 (this "Agreement"), by and between Arcadia Biosciences, Inc., a corporation of the State of Arizona, United States of America, having its principal place of business at 202 Cousteau Place, Suite 200, Davis California, 95616, U.S.A., (hereinafter "Arcadia") and Ross Products Division of Abbott Laboratories, a corporation of the State of Illinois, United States of America, having a place of business at 625 Cleveland Avenue, Columbus, Ohio 43215-1724, U.S.A. (hereinafter "Abbott").

WITNESSETH:

WHEREAS, Arcadia is interested in the production of gamma-linolenic acid ("GLA") and dihomo-gamma-linolenic acid ("DGLA") and arachidonic acid ("ARA") in plant seeds and tissues and microorganisms and their subsequent commercial exploitation;

WHEREAS, Abbott owns or co-owns and has the right to grant licenses under certain U.S. Patents and patent applications and their foreign counterparts which relate to the production of one or more of GLA, DGLA or ARA in plant seeds and tissues and microorganisms;

WHEREAS, subject to the outcome of such development and production, Arcadia desires to use and sell one or more of GLA, DGLA or ARA and both Arcadia and Abbott desire to sell certain products containing such one or more of GLA, DGLA or ARA as set forth in this Agreement, and Arcadia further desires to sell and supply to Abbott (and Abbott desires to purchase from Arcadia) the same for further formulation and combination in its products for commercial sale as set forth in this Agreement;

WHEREAS, the Parties desire to amend and restate the Agreement (the "Original Agreement") that was originally entered into as of October 30, 2003 ("Original Date") and the First Amendment dated March 24, 2006 which established a relationship pursuant to which the Parties shared their respective biotechnology skills, materials and rights in order for Arcadia to engage in the development and production of one or more of GLA, DGLA or ARA in plant seeds and tissues and microorganisms and their subsequent commercial exploitation by Arcadia or Abbott as set forth herein;

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

NOW, THEREFORE, in consideration of the premises and mutual covenants herein, the Parties (as hereinafter defined) agree as follows:

1. DEFINITIONS

Where used in this Agreement the following terms shall have the meanings ascribed below:

(a) "Abbott Fields" means the fields of Infant Formula, Medical Foods, Pharmaceuticals and Medical Nutritionals.

(b) "Abbott Co-Owned Patents" shall refer to: (i) the patents and patent applications listed in Exhibit A; (ii) the patents and patent applications arising under any Abbott Improvement; (iii) any continuations, continuations-in-parts, or divisionals of (i) or (ii); (iv) any extension, renewal, reexamination or reissue of a patent identified in (i), (ii) or, (iii); and (v) all foreign equivalents of (i), (ii), (iii) or (iv).

(c) "Abbott Only Patents" shall refer to: (i) the patents and patent applications listed in Exhibit A-1; (ii) the patents and patent applications arising under any Abbott Improvement; (iii) any continuations, continuations-in-parts, or divisionals of (i) or (ii); (iv) any extension, renewal, reexamination or reissue of a patent identified in (i), (ii) or, (iii); and (v) all foreign equivalents of (i), (ii), (iii) or (iv).

(d) "Abbott Transgenic Oil" means Transgenic Oil which has received Regulatory Approval and which conforms to Abbott's specific compositional requirements for use in Abbott products as specified in the Research Plan.

(e) "Affiliate" means any corporation, firm, limited liability company, partnership or other entity that directly or indirectly controls or is controlled by or is under common control with a Party to this Agreement. For the purpose of this definition, control means ownership, directly or through one or more Affiliates, of fifty percent (50%) (or such lesser percentage which is the maximum allowed to be owned by a foreign entity in a particular jurisdiction) or more of the shares of stock entitled to vote for the election of directors, in the case of a corporation, or fifty percent (50%) (or such lesser percentage which is the maximum allowed to be owned by a foreign entity in a particular jurisdiction) or more of the equity interests in the case of any other type of legal entity, status as a general partner in any partnership, or any other

arrangement whereby a Party controls or has the right to control the board of directors or equivalent governing body of a corporation or other entity. As applied to Arcadia, Affiliate shall solely refer to Exeter Life Sciences, Inc. or any of its subsidiaries. TAP Holdings Inc., a Delaware corporation, and TAP Pharmaceuticals Inc., a Delaware corporation that is a wholly-owned subsidiary thereof, are not Affiliates under this definition.

(f) "ARA" means Arachidonic Acid, esters thereof, amides thereof, and acid addition salts thereof.

(g) "ARA Transgenic Oil" means a Transgenic Oil containing a commercially significant concentration of ARA. For purposes of the nominal pricing structure(s), royalty rates, sales volumes, and the like set forth in this Agreement, the Parties have assumed a forty percent (40%) concentration of ARA in the ARA Transgenic Oil, and such concentration is specified where applicable. However, the Parties acknowledge and understand that the actual ARA concentration in the ARA Transgenic Oil may be greater than or less than 40%, and where ARA concentration is a consideration (e.g., for purposes of annual sales volumes and determining price), such consideration is specified herein.

(h) "Co-Assignee Oil" shall have the meaning set forth in Section 2(h) below.

(i) "Commercial Manufacture" means methods and processes used by or on behalf of a Party for producing, processing, extracting or isolating Transgenic Oil for Commercial Sale.

(j) "Calendar Quarter" means a three (3) calendar month period beginning on July 1, 2007, or any successive three (3) calendar month period.

(k) "Claims" shall have the meaning set forth in Section 11(a).

(l) "Commercial Sale" means the sale or transfer of a Transgenic Oil by Arcadia, an Affiliate or sublicensee to a non-Affiliate Third Party or Abbott for consideration.

(m) "Confidential Information" means any information including, but not limited to, ideas, proposals, plans, Know-How, reports, drawings, designs, data, discoveries, inventions, Improvements, suggestions, specifications, products, samples, components and materials relating to the Research Project or this Agreement and all information relating to the manufacture, formulation, analysis, stability, pharmacology, toxicology, pathology, clinical data, results of clinical efficacy studies, clinical effects and indications for use of Transgenic Oil, which a Party discloses to the other Party, the terms of this Agreement and all records and

information discussed or gathered by a Party pursuant to Sections 2(i), 4(a) and 8(e) except any portion thereof which:

(i) is known to the receiving Party at the time of disclosure, unless subject to confidentiality obligations contained in the Confidentiality Agreement between the Parties dated October 1, 2002 or any agreement between the Parties executed prior to the execution of this Agreement;

(ii) disclosed to the receiving Party by a Third Party who has a right to make such disclosure;

(iii) is or becomes part of the public domain other than as a result of a breach hereof; or

(iv) is independently developed, without reference to the Confidential Information of the disclosing Party, by or for the receiving Party as evidenced by its written records.

(n) "Cost of Goods Sold" for each Transgenic Oil as used herein means average inventory value of product sold during the period and consistent with Generally Accepted Accounting Principles (GAAP). Average inventory value includes all product costs directly associated with the production and conversion of raw materials and work-in-process into finished goods available for sale. For purposes of this definition, product costs include direct material, direct labor and manufacturing overhead costs. Manufacturing overhead costs include direct material costs, direct labor costs, and such items as depreciation, taxes, quality assurance costs, insurance and utilities charges incurred in the manufacturing process.

(o) "Development Committee" shall have the meaning provided in Section 6(c) of this Agreement.

(p) "Dietary Foods for Special Medical Purposes" means a category of foods for particular nutritional uses specifically processed or formulated and intended for the dietary management of patients and to be used under medical supervision. They are intended for the exclusive or partial feeding of patients with a limited, impaired or disturbed capacity to take, digest, absorb, metabolize or excrete ordinary foodstuffs or certain nutrients contained therein or metabolites, or with other medically-determined nutrient requirements whose dietary

management cannot be achieved only by modification of the normal diet, by other foods for particular nutritional uses, or by a combination of the two.

(q) "DGLA" means Dihomo-gamma-linolenic Acid, esters thereof, amides thereof, and acid addition salts thereof.

(r) "[...*...] License" shall have the meaning set forth in Section 2(g) below.

(s) "[...*...]" means any oil or lipid produced by [...*...] or the then current successor or assignee of the [...*...] License in crops using technology licensed pursuant to the [...*...] License containing DHA and/or EPA.

(t) "Effective Date" means July , 2007.

(u) "Exclusive License" means a license whereby the licensee's rights shall be sole and exclusive and shall operate to exclude all others, including the licensor, other than any rights that the licensor expressly reserves.

(v) "FDA" means the United States Food and Drug Administration or any successor entity thereto.

(w) "Improvements" shall have the meaning set forth in Section 3 below.

(x) "Infant Formula" means a food which purports to be or is represented for special dietary use solely as a food for infants by reason of its simulation of human milk or its suitability as a complete or partial substitute for human milk.

(y) "GLA" means Gamma-linolenic Acid, esters thereof, amides thereof, and acid addition salts thereof.

(z) "Know-How" means that proprietary technology developed or utilized by a Party under this Agreement, directly related to developing, manufacturing or producing Transgenic Oil. Examples of such proprietary technology include, but are not limited to, manufacturing data, DNA sequences, genetic constructs, plasmids, genetic material, formulation or production technology, methods of synthesis, isolation and purification methods and other manufacturing information useful or required to manufacture or produce Transgenic Oil under this Agreement and that proprietary data developed by a Party related to tolerance of Transgenic Oil made under this Agreement.

(aa) "Medical Foods" means, as defined in Section 5(b) of the Orphan Drug Act (21 U.S.C. 360ee(b)(3)), foods which are formulated to be consumed or administered enterally

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

5

under the supervision of a physician and which are intended for the specific dietary management of a disease or condition for which distinctive nutritional requirements, based on recognized scientific principles, are established by medical evaluation. For purposes of this Agreement, Medical Foods shall include Dietary Foods for Special Medical Purposes, which term is intended to cover such products sold outside of the United States.

(bb) "Medical Nutritionals" means, subject to the limitations set forth below, any food or other preparation for human consumption, including enteral or parenteral consumption, which (i) when taken into the body, serves to nourish or build up tissues, supply energy or maintain, restore or support adequate nutritional status or metabolic function, and (ii) is formulated to be useful in nutritional or dietary management or supplementation, or is formulated specifically for patients with a specific disease or condition or special dietary needs, and (iii) are marketed to physicians, health care professionals and health-related institutions (i.e., hospitals, physician's offices, skilled nursing facilities and clinics) where such marketing activities account for greater than thirty percent (30%) of the aggregate annual promotional spending allocable to such medical nutritional product line, and (iv) may optionally also be promoted directly to the end consumers or marketed at retail for general use. Examples of Medical Nutritionals as of the Original Date include, without limitation, the [...*...] product family, including [...*...]; the [...*...] product family, including without limitation [...*...]; and the [...*...] product family, including without limitation [...*...]. Medical Nutritionals specifically excludes nutritional supplements in pill, capsule, or liquid concentrate form, conventional foods, and nonhuman food supplements. This definition shall not restrict the product form (i.e., such nutritional products may be liquid, powder, solid or other form).

(cc) "Milestones" means the milestones for the Research Project serially numbered and set forth in the attached Exhibit B, and as may be amended from time to time by the Development Committee; an individual Milestone is referenced herein by specifying the number corresponding to such Milestone as it appears on such Exhibit B.

(dd) "Net Sales" means the gross sales or other exchange for value of Transgenic Oil by Arcadia, its Affiliates and sublicensees, in the Territory less (i) allowances and adjustments separately and actually credited or payable to customers for spoiled, damaged, outdated and

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

6

returned product, whether during the specific royalty period or not; (ii) reasonable and customary trade discounts earned or granted; (iii) taxes (other than income taxes), duties and other governmental charges levied on, absorbed or otherwise imposed on import, export, sale, distribution and use of Transgenic Oil and products containing Transgenic Oil; and (iv) freight, shipping, postage, transportation and shipping insurance costs.

(ee) "Party" means Arcadia or Abbott, depending on the context, and "Parties" means Arcadia and Abbott.

(ff) "Pharmaceuticals" means a compound, substance, chemical entity, admixture, etc., which if sold in the United States, would be controlled by Section 505 or Section 507 of Federal Food, Drug and Cosmetic Act.

(gg) "Regulatory Approval" means approval within the United States from all required regulatory bodies necessary to establish that a Transgenic Oil made under this Agreement is safe for human consumption as a dietary supplement and food ingredient. For the avoidance of doubt, Regulatory Approval does not include approval within the United States from any required regulatory bodies necessary to establish that a Transgenic Oil made under this Agreement is safe for use within the Abbott Fields.

(hh) "Research Plan" means the detailed written plan and timeline for the Research Project and commercialization as set forth in Exhibit B, as may be amended from time to time by the Development Committee.

(ii) "Research Project" means the research, development and commercialization effort by both Abbott and Arcadia to produce any one or more of one or more of GLA, DGLA or ARA in plant seeds and tissues under the Abbott Only Patents and the Abbott Co-Owned Patents pursuant to the Research Plan under this Agreement.

(jj) "Royalty Rate" means either the GLA and DGLA Royalty Rate or the ARA Royalty Rate, depending on whether the particular Transgenic Oil contains GLA and/or DGLA or ARA.

(kk) "SDA" means Stearidonic Acid, esters thereof, amides thereof, and acid addition salts thereof.

(ll) "Territory" means the entire world.

(mm) "Testing Party" shall have the meaning set forth in Section 2(g).

(nn) "Third Party" means any person other than Arcadia or Arcadia's Affiliates or Abbott or Abbott's Affiliates

(oo) "Transgenic Oil" means any oil or lipid that contains any one or more of GLA, DGLA, and/or ARA made pursuant to this Agreement. As used in this Agreement, Transgenic Oil shall not include Co-Assignee Oil.

(pp) "Valid Claim" means a claim of an issued, unexpired patent included in any of the Abbott Co-Owned Patents or Abbott Only Patents, which has not been held or admitted to be invalid, unpatentable or unenforceable by a final non-appealable decision, of a court of competent jurisdiction, administrative agency having authority over patent, or the arbitration court in accordance with Exhibit D.

2. LICENSE GRANT

(a) Exclusive License Grant to Abbott Only Patents. Subject to the obligations and retained rights in Sections 2(d), 2(e), 2(f), 2(g) and 2(i) below, Abbott hereby grants to Arcadia, under the Abbott Only Patents, Know-How, Abbott Improvements, and Abbott's interest in the Joint Improvements, a royalty-bearing Exclusive License including the right to sublicense, within the Territory, (i) to make and have made one or more of GLA, DGLA or ARA in plant seeds and plant tissue, and (ii) to use, import, export, sell, and offer to sell one or more of GLA, DGLA or ARA made pursuant to (i) above. In the event the territorial exclusivity or period of exclusivity of the license granted hereunder is limited by action, laws or regulations of any government, the license granted shall not terminate, but shall remain exclusive to the extent permitted by such government action and shall become non-exclusive in such jurisdiction to the extent necessary to conform with applicable law and regulations. As soon as practicable after the Original Date, Abbott delivered to Arcadia all Know-How in its possession or control.

(b) License Grant to Abbott Co-Owned Patents. Subject to the obligations and retained rights in Sections 2(d), 2(e), 2(f), 2(g), 2(h) and 2(i) below, Abbott hereby grants to Arcadia, under the Abbott Co-Owned Patents, Know-How, Abbott Improvements, and Abbott's interest in the Joint Improvements, a royalty-bearing license including the right to sublicense, within the Territory, (i) to make and have made one or more of GLA, DGLA or ARA in plant seeds and plant tissue, and (ii) to use, import, export, sell, and offer to sell one or more of GLA,

DGLA or ARA made pursuant to (i) above. Except for those rights retained by or granted to the Co-Assignee and as otherwise provided in this Agreement, Abbott hereby agrees that it will not grant to any Third Party any further rights or licenses to the Abbott Co-Owned Patents to (A) make and have made one or more of GLA, DGLA or ARA in plant seeds and plant tissue, and (B) to use, import, export, sell, and offer to sell one or more of GLA, DGLA or ARA made pursuant to (A). As soon as practicable after the Original Date, Abbott delivered to Arcadia all Know-How in its possession or control.

(c) Non-Exclusive Grant in Microbial Fermentation. Subject to Sections 2(d), 2(e), 2(f), 2(g), 2(h), and 2(i) below, Abbott hereby grants to Arcadia, under the Abbott Co-Owned Patents, Abbott Only Patents, Know-How, Abbott Improvements, and Abbott's interest in the Joint Improvements, a royalty-

bearing non-exclusive license including the right to sublicense, within the Territory, (i) to make and have made one or more of GLA, DGLA or ARA by microbial fermentation, and (ii) to use, import, export, sell, and offer to sell one or more of GLA, DGLA or ARA made pursuant to (i) above.

(d) **Exclusive Purchase Right**. Arcadia grants to Abbott the exclusive right to purchase from Arcadia Transgenic Oil to make or have made products in the Abbott Fields and use, import, export, sell and offer for sale such products in the Abbott Fields. Arcadia shall not transfer, sell or grant any rights to produce Transgenic Oil to a Third Party for the making, having made, use, import, export, sale or offer for sale by such Third Party of products in the Abbott Fields, and shall contractually restrict any Third Party to whom it sells or transfers Transgenic Oil from any use in products within the Abbott Fields.

Notwithstanding the foregoing, Arcadia grants to Abbott the non-exclusive right to purchase, from Arcadia, ARA Transgenic Oil for the purpose of making or having made Infant Formula, and to use, import, export, sell and offer for sale such products in Infant Formula. Arcadia may transfer, sell, or grant rights to produce ARA Transgenic Oil to any Third Party for the making, having made, use, import, export, sale or offer for sale by such Third Party for the purpose of making or having made Infant Formula.

(e) **Right to Use as Ingredient**. Abbott hereby retains, under the Abbott Co-Owned Patents, Abbott Only Patents, Know-How and Abbott Improvements, a non-exclusive right within the Territory to use, import, export, conduct research and development, sell and offer to

sell one or more of GLA, DGLA, or ARA as an incorporated ingredient in any and all current or future products produced by or for Abbott which now, or in the future, incorporate one or more of GLA, DGLA, or ARA as an ingredient. Abbott shall have no right to sell or offer to sell Transgenic Oil alone, or in combination with any commercial product, produced as a direct result of research and development performed by Abbott under the Abbott Co-Owned Patents, the Abbott Only Patents, Know-How and Abbott Improvements. Abbott shall have no right to sell, offer to sell or supply Transgenic Oil made hereunder, either alone or in combination with any other component, as an ingredient.

(f) **Grant to Abbott**. Arcadia hereby grants to Abbott, under the Arcadia Improvements, a non-exclusive license within the Territory, with the right to sublicense, to use, import, export, sell and offer to sell Transgenic Oil as an incorporated ingredient in any current or future Abbott product which now, or in the future, incorporates one or more of GLA, DGLA, and ARA as an ingredient in such finished product, but excluding nutritional supplements (in pill, capsule, or liquid concentrate form) personal care products, industrial use products, and products for non-human use. Arcadia hereby grants to Abbott, under the Arcadia Improvements, a non-exclusive license, without the right to sublicense, within the territory, to conduct research and development on one or more of GLA, DGLA or ARA for the sole purpose of fulfilling its obligations under this Agreement. Such license to Abbott shall be royalty-free during the period in which Abbott is exclusively sourcing Transgenic Oil from Arcadia.

(g) **[...*...]**. Abbott represents, and Arcadia acknowledges such representation, that Abbott granted a license to [...*...] executed on [...*...] (the "[...*...] License"), to make or have made DHA and/or EPA in crops or by microbial fermentation, and to use, import, export, sell and offer to sell DHA and/or EPA. Abbott further represents, and Arcadia acknowledges such representation, that such DHA and/or EPA oil could contain residual amounts of one or more of GLA, DGLA or ARA. Arcadia agrees that, with regard to [...*...] where the residual one or more of GLA, DGLA or ARA is [...*...] percent ([...*...]) or less, Arcadia shall not assert a claim against [...*...] or the then current successor to or assignee of the [...*...] License for infringement of the Abbott Co-Owned Patents, Abbott Only Patents, Know-How and Improvements based upon the fact that such [...*...] contains one or more of GLA, DGLA or ARA, and Arcadia shall take no action

against [...*...] in connection therewith. Arcadia further agrees that, with regard to [...*...] where the residual one or more of GLA, DGLA or ARA is between […*…] percent […*…] and […*…] percent […*…], Arcadia shall not assert a claim against [...*...] for infringement of the Abbott Co-Owned Patents or Abbott Only Patents based upon such [...*...], and Arcadia shall take no action against [...*...] in connection therewith; provided, however, that the Royalty Rate shall be adjusted as provided in Section 4(d). Either Party may test [...*...] ("Testing Party") to determine the residual quantities of one or more of GLA, DGLA, or ARA, if any. If the other Party disputes the determination of the Testing Party, the other Party may submit the [...*...] to an independent laboratory qualified to determine quantities of residual oils to determine the residual quantities of one or more of GLA, DGLA or ARA, and the Parties hereby agree to be bound by the determination of such independent laboratory with respect to that [...*...]. The Party challenging the determination of the Testing Party shall pay the costs of the independent laboratory, unless the results show that the Testing Party's results were inaccurate and the Testing Party shall cover the costs of the independent laboratory. Nothing contained in this Section 2(g) shall prevent Arcadia from granting a sublicense of its rights under this Agreement to [...*...] for the production of one or more of GLA, DGLA or ARA and from enforcing such sublicense against [...*...].

(h) **Co-Assignee Oil**. Abbott hereby represents and Arcadia acknowledges such representation that [...*...] and its Affiliates, specifically including [...*...] (collectively, "Co-Assignee") retain the right under the Abbott Co-Owned Patents to make or have made SDA, ARA, DGLA, docosahexaenoic acid ("DHA") and/or eicosapentaenoic acid ("EPA") in plants seeds, plant tissue, and by microbial fermentation and to use, import, export, sell and offer to sell SDA, ARA, DGLA, DHA and/or EPA oil(s) alone or in combination with GLA ("Co-Assignee Oil") only so long as the ratio of such oils to GLA is greater than [...*...] and the residual of GLA is less than or equal to [...*...]%). Arcadia agrees that with regard to Co-Assignee Oil where the ratio of SDA, ARA, DGLA, DHA and/or EPA to GLA is greater than [...*...] and the residual of GLA is less than or equal to [...*...]%), Arcadia shall not pursue Co-Assignee or the then current successor to, assignee of or sublicensee of the Co-Assignee for infringement of the Abbott Co-Owned Patents, Know-How and Improvements based on the fact that such oil contains GLA, and Arcadia shall take no

action against the Co-Assignee in connection therewith. Provided, however, that Abbott agrees that upon Arcadia's reasonable request, Abbott will enforce its rights under the agreement between Abbott and Co-Assignee with respect to the restriction on Co-Assignee Oil.

(i) **Residual Stearidonic Acid**. The Parties acknowledge that one or more of GLA, DGLA or ARA made in plant seeds, plant tissue or by microbial fermentation may contain residual SDA. Abbott hereby grants to Arcadia, under the Abbott Co-Owned Patents, Abbott Only Patents, Know-How and Abbott Improvements, a royalty-free, non-exclusive license including the right to sublicense, within the Territory, (i) to make and have made SDA as a residual, less than four percent (4%), in Transgenic Oil produced in plant seeds, plant tissue and by microbial fermentation, and so long as the ratio of GLA, DGLA and/or ARA to SDA is greater than three to one (3:1), and (ii) to use, import, export, sell, sell for use, offer to sell and otherwise commercialize and exploit the residual SDA made pursuant to clause (i), above.

(j) **Medical Nutritional Verification Rights**. Upon request by Arcadia, and not more than once per calendar year, Abbott shall provide detailed records of its promotional spending activities relating to products that Abbott has identified as Medical Nutritionals.

3. IMPROVEMENTS

"Improvements" made under this Agreement mean any and all new developments, enhancements, additions, inventions, modifications, formulations, derivative works, changes, data, discoveries, findings, methods of manufacture and production (whether patentable or not) of GLA, DGLA, and/or ARA under the Abbott Co-Owned Patents, Abbott Only Patents, Know-How, Research Project or Commercial Manufacture made by either Party, but shall not include clinical efficacy trials conducted by, or on behalf of Abbott or Arcadia, or data related thereto except to the extent disclosed pursuant to Section 6(d). The Parties recognize that development of Transgenic Oil in accordance with this Agreement may result from or involve Improvements by members of the Development Committee or other employees or agents of the Parties, and agree to the following provisions relating thereto:

(a) "Arcadia Improvement" means an Improvement under the Abbott Co-Owned Patents, Abbott Only Patents, Know-How, Research Project or Commercial Manufacture that is conceived and reduced to practice solely by employees or agents of Arcadia during the term of

this Agreement that relates or pertains to genetic material, plant seeds, plant tissues, micro-organisms, methods or processes for producing Transgenic Oil. Arcadia Improvements shall not include in-vitro, animal and clinical data regarding the efficacy of Transgenic Oil in affecting human or non-human diseases except to the extent disclosed pursuant to Section 6(d) or any improvements in plant transformation and regeneration methods. Arcadia Improvements shall be subject to the terms and conditions of this Agreement. Arcadia shall pay for and be responsible for preparing, filing, prosecuting and maintaining any patent applications and patents directed to Arcadia Improvements. Arcadia shall provide Abbott ample opportunity to review and comment on such patent applications, prosecution documents and foreign applications prior to their filing.

(b) "Joint Improvement" means an Improvement under the Abbott Co-Owned Patents, Abbott Only Patents, Know-How, Research Project or Commercial Manufacture that is: (1) jointly conceived or jointly reduced to practice by an employee or agent of Arcadia and an employee or agent of Abbott, or (2) conceived of by an employee or agent of either Arcadia or Abbott and reduced to practice by an employee or agent of the other Party, or was conceived by an employee or agent or contractor of Abbott in the course of research funded by Arcadia, or was conceived by an employee or agent or contractor of Arcadia in the course of research funded by Abbott, during this Agreement. Joint Improvements shall belong jointly to Abbott and Arcadia with enjoyment of full ownership rights subject to the terms and conditions of this Agreement. Arcadia and Abbott shall jointly be responsible for preparing, filing, prosecuting and maintaining any patent applications and patents directed to Joint Improvements ("Joint Patents"), and shall share all costs associated therewith evenly. The Parties shall decide which Party shall take primary responsibility for preparing, filing, prosecuting and maintaining such patent applications and patents. The other Party shall be given ample opportunity to provide input and to review any and all documents prior to their filing with a patent office.

(c) "Abbott Improvement" means an Improvement under the Abbott Co-Owned Patents, Abbott Only Patents, Know-How, Research Project that is conceived and reduced to practice solely by employees or agents of Abbott during the term of this Agreement that directly relates or pertains to genetic material and patent claims associated thereto, micro-organisms, methods or processes for producing Transgenic Oil. Abbott Improvements shall not include in-

vitro, animal and clinical data regarding the efficacy of Transgenic Oil or Abbott Transgenic Oil in affecting human or non-human diseases except to the extent disclosed pursuant to Section 6(d). Abbott Improvements shall be subject to the terms and conditions of this Agreement. Abbott shall pay for and be responsible for preparing, filing, prosecuting and maintaining any patent applications and patents directed to Abbott Improvements, which shall be added to Exhibit A or Exhibit A-1. Abbott shall provide Arcadia ample opportunity to review and comment on such patent applications, prosecution documents and foreign applications prior to their filing.

(d) From time to time patent counsel for the respective Parties shall confer and determine how best to protect any Arcadia Improvements, Abbott Improvements and Joint Improvements. If a Party or the Parties decide that patent applications should be filed, then each Party agrees to make available to the other all information in its possession required to complete the patent application and prosecution. Each Party shall cooperate with the other and execute those documents required to complete the patent filing and prosecution thereof.

4. CONSIDERATION

(a) **Consideration for this Agreement**. The Parties hereby agree to amend and restate the terms of their Original Agreement and First Amendment thereto, dated March 24, 2006. In consideration for this Amended and Restated Agreement, the Parties agree to revise their mutual rights and obligations as set forth in the Original Agreement and First Amendment. As further consideration, the Parties agree that Abbott will pay Arcadia an additional royalty of the Net Trait Fee on Co-Assignee Oil as set forth on Exhibit C.

(b) **License Fee**. The Parties acknowledge that Arcadia paid [...*...] in cash to Abbott, upon execution of the Original Agreement.

(c) **Research and Development Fee**. Arcadia provided minimum funding in the amount of [...*...] to Abbott between 2003 and 2005 for research under the Research Plan related to broadening and strengthening of Abbott Co-Owned or Abbott Only Patents on genes used for the production of GLA, DGLA, and/or ARA in plants. An initial payment of [...*...] was paid to Abbott upon

signing of the Original Agreement and other payments were made as described in the Research Plan.

(d) **Royalty**. In partial consideration for licenses granted herein, Arcadia shall pay to Abbott as follows:

(i) For Transgenic Oil containing GLA and/or DGLA as the sole product, a royalty of the Royalty Rate times Net Sales of Transgenic Oil; subject to any adjustments as provided below, the "GLA and/or DGLA Royalty Rate" shall be determined as follows:

GLA and/or DGLA Royalty Rate	Cumulative royalties paid during the Term	
	Above	Up to
[...*...]	[...*...]	[...*...]
[...*...]	[...*...]	[...*...]
[...*...]	[...*...]	

For example, if Arcadia has paid cumulative royalties of [...*...] and has Net Sales of Transgenic Oil in the next quarter of $[...*...], the calculation of royalty is as follows: ([...*...]% x $[...*...] = $[...*...]) + ([...*...]% x $[...*...] = $[...*...]) = $[...*...].

(ii) For Transgenic Oil containing ARA, a royalty equal to the ARA Royalty Rate times non-Abbott Net Sales of ARA Transgenic Oil. Subject to any adjustments as provided below, the "ARA Royalty Rate" shall be determined as follows:

Annual non-Abbott Sales Volume – pounds of ARA Transgenic Oil (40% ARA)	ARA Royalty Rate
Up to [...*...] MM	[...*...]%
up to [...*...] MM	[...*...]%
up to [...*...] MM	[...*...]%
up to [...*...] MM	[...*...]%
up to [...*...] MM	[...*...]%
> [...*...] MM	[...*...]%

Notwithstanding the applicable ARA Royalty Rate stated above, should the concentration of ARA in the ARA Transgenic Oil be other than 40%, the annual volume requirements shall change proportionally. For example, in the event that Arcadia produces an ARA Transgenic Oil that contains a concentration of 20% ARA, the annual volume

requirements set forth in the chart above would be doubled, so that, for example, non-Abbott sales of up to [...*...] MM pounds of ARA Transgenic Oil would be subject to an ARA Royalty Rate of [...*...]%.

In the event that [...*...] or a successor or assignee to the [...*...] License produces more than [...*...] pounds of [...*...] with a GLA/DGLA and/or ARA content of greater than [...*...] percent ([...*...]%) but less than [...*...] percent ([...*...]%) in a given calendar year, the Royalty Rate beginning on the date [...*...]'s production exceeds the above threshold and continuing during the following twelve-month period, shall be reduced by [...*...] percent [...*...]). If [...*...] produces more than [...*...] of [...*...] with a residual one or more of GLA, DGLA or ARA content of greater than [...*...]%) but not more than [...*...] percent ([...*...]%) in the above example, the calculation of royalty would be as follows: ([...*...]% x $[...*...] = $[...*...]) + ([...*...]% x $[...*...] = $[...*...]) = $[...*...].

(iii) For a combination product sold by Arcadia or an Arcadia Affiliate that contains Transgenic Oil and one or more additional components and for which there is an existing marketable application for such combination product, then the royalty will be (a) the applicable Royalty Rate, times (b) the weight, times (c) the weight percentage of Transgenic Oil in the combination product, times (d) the average net selling price of such Transgenic Oil in such marketable application on a per unit weight percentage basis for the Calendar Quarter for which royalties are being calculated. For example, if Arcadia has paid cumulative royalties of $[...*...] and sells [...*...] pounds of soy powder (a combination product) containing [...*...] percent ([...*...]%) by weight of a Transgenic Oil and the average net selling price of a comparable application of such Transgenic Oil is [...*...] the calculation of royalty is [...*...]% x [...*...]% x $[...*...] = [...*...].

(iv) For a combination product sold by Arcadia or an Arcadia Affiliate that contains Transgenic Oil and one or more additional components and for which there is no existing marketable application for such combination product, then the royalty will be (a) the applicable Royalty Rate, times (b) the weight, times (c) the weight percentage of Transgenic Oil in the combination product, times (d) the higher of, (x) the overall average net selling price of such Transgenic Oil, or (y) the Cost of Goods Sold, on a per unit basis for the Calendar Quarter for which royalties are being calculated.

(v) If both Parties determine that the royalty for (d) (iii) or (d) (iv) above prohibits commercial success for a particular application, then the Parties will review the financial data and agree to work together in good faith to find a mutually acceptable business resolution of the matter.

(vi) Notwithstanding the foregoing provisions of the Section 4(d), if any quantity of Transgenic Oil, either alone or in combination with at least one other component as described above, is used in the manufacture of another product subject to royalty hereunder, or is sold to a sublicensee or an Affiliate of Arcadia, or if rights under more than one patent are used, only one royalty, namely, the royalty applicable to the ultimate product subject to royalty hereunder, shall be paid to Abbott, in order that duplication of royalties be avoided.

(vii) If Arcadia must pay to a Third Party license fees or royalties to obtain a patent right from such Third Party that is reasonably needed to make, have made, use, sell, offer for sale, and/or import Transgenic Oil, and the Royalty Rate is [...*...] percent ([...*...]%) or higher, then the royalties described in Sections 4(d) shall be reduced by the amount of such fees and royalties actually paid to such Third Party, but if the Royalty Rate is [...*...] percent ([...*...]%), then the royalties described in Section 4(d) shall be reduced by one-half (1/2) the amount of such fees and royalties actually paid to such Third Party; provided, however, that in no event shall the royalties described in Section 4(d) be reduced below the applicable Royalty Rate minus [...*...] percent ([...*...]%). For example, if Arcadia has paid cumulative royalties of $[...*...] and has Net Sales of Transgenic Oil in the quarter just completed of $[...*...], but has to pay $[...*...] in royalties to a Third Party, the calculation of royalties is ([...*...]% x $[...*...]) — $[...*...] = $[...*...]; however, the royalty may not be reduced below ([...*...]% x $[...*...]) = $[...*...], so the royalty for the quarter would be $[...*...] given the cumulative royalties paid.

(viii) Notwithstanding anything in this Agreement to the contrary, Arcadia shall not owe any royalty payments on sales of Transgenic Oil to Abbott or any Abbott Affiliate and accordingly, such sales shall not be included in calculating Net Sales.

(e) **Royalty Report**. Each royalty payment shall be accompanied by a statement which sets forth the following information:

(i) Total quantities sold of Transgenic Oil and amount involved, specified on a country by country basis.

(ii) Total amounts of any excise taxes, sales taxes, shipping costs, insurance, sales commissions, import/export duties, returns, credits and discounts used to arrive at Net Sales.

(iii) Amounts of royalties payable specified in accordance with Section 4(a) and 4(d) above.

(f) **Royalty Payments**. Royalty payments shall be paid quarterly in U.S. dollars provided that the royalty payment exceeds one hundred U.S. dollars (US$100). Royalty payments shall be due and received by Abbott within thirty (30) days after each Calendar Quarter. The royalty rate shall be computed in U.S. dollars at the exchange rates published in The Wall Street Journal on the last business day of that Calendar Quarter. If any payment under this Agreement is not paid when due, the unpaid amount shall bear interest at an annual rate of two (2) percentage points above the prime lending rate quoted on the last day of said period by The Wall Street Journal until paid.

(g) **Royalty Payments - Place**. Royalty payments due Abbott hereunder shall be made by wire transfer to Abbott at [...*...], or pursuant to such other instructions provided in writing by Abbott.

(h) **Records and Audit**. Arcadia, its Affiliates and sublicensees (if any) shall keep adequate records in sufficient detail to enable the royalties due to Abbott hereunder to be determined. Said records shall be maintained during for a period of three (3) years following the termination of this Agreement. Upon fifteen (15) days written notice, said records may be inspected, and employees associated with performance under this Agreement may be interviewed, by an accountant selected by Abbott, approved by Arcadia, which approval shall not be unreasonably withheld, and retained at Abbott's expense. Such examination shall be conducted no more than once annually upon request by Abbott, during regular business hours and in such a manner as not to interfere with Arcadia's normal business activities. If such examination should disclose any underreporting by Arcadia, Arcadia shall immediately pay Abbott such amount, along with interest calculated pursuant to the terms set forth in this Section 4. Abbott shall require such accountant to undertake to preserve the confidentiality of all information learned or obtained in connection with such audit; provided, however, the

accountant shall report to Abbott the amount properly payable and shall provide Abbott with an explanation and detailed calculations for any discrepancy revealed by the audit. Abbott shall bear the expense of the auditor, provided, however, Arcadia shall reimburse Abbott for all reasonable audit expenses in the event that the audit establishes underpayment in excess of ten percent (10%) of payments properly due hereunder with respect to the audited period.

(i) **Taxes**. Any income or other taxes which a paying Party is required by law to pay or withhold on behalf of a receiving Party with respect to royalties or other payments payable to a receiving Party under this Agreement shall be deducted from the amount of such royalties or other payments due, and paid or withheld as appropriate by the paying Party on behalf of the receiving Party. Any such tax required by law to be paid or withheld will be an expense of, and borne solely by, the receiving Party. The paying Party will furnish the receiving Party with the best available evidence (receipts, etc.) of such payment or amount withheld as soon as practicable after such payment or such amount is withheld. The Parties will reasonably cooperate in completing and filing documents required under the provisions of any applicable laws or under any other applicable law in connection with the making of any required tax payment or withholding tax payment in connection with a claim for exemption from, or entitlement to a reduced rate of withholding, or in connection with any claim to a refund of or credit for any such payment.

5. INTELLECTUAL PROPERTY RIGHTS

(a) **Ownership**. All right, title and interest in and to all Abbott Only Patents and the Abbott Co-Owned Patents related to Transgenic Oil shall be owned exclusively or jointly by Abbott, as set forth on Exhibit A and Exhibit A-1. Notwithstanding the foregoing, Abbott has been granted a license, with the right to sublicense, the [...*...] patent shown on Exhibit A, but has no ownership rights to such patent. If Arcadia challenges Abbott's ownership rights, Abbott can terminate this Agreement to the extent permitted by law.

(b) **Other Technology Rights**. Except as otherwise expressly provided in this Agreement, under no circumstances shall a Party hereto, as a result of this Agreement, obtain any ownership interest in or other right to any technology, trade secrets, Know-How, patents,

pending patent applications, products, or biological materials of the other Party, including items owned, controlled or developed by the other Party at any time pursuant to this Agreement.

(c) **Patent Marking**. Arcadia shall mark each Transgenic Oil (or its container or package) made by or on behalf of Arcadia with the applicable patent number or numbers of any issued or pending patents licensed to Arcadia under this Agreement.

(d) **Maintenance of Patents**. Unless otherwise specified herein or agreed to in writing by the Parties, during the term of this Agreement Abbott shall ensure that it or its designee diligently prepare, file, prosecute and maintain Abbott Co-Owned Patents (excluding the [...*...] patent) and Abbott Only Patents and keep Arcadia informed of developments in the prosecution thereof. This shall include: 1) providing Arcadia, upon request by Arcadia, with a copy of any significant communication received from or transmitted to the United States Patent and Trademark Office regarding any of the Abbott Co-Owned Patents and Abbott Only Patents, and 2) providing Arcadia an opportunity to comment upon significant communications. Except as otherwise expressly provided in this Agreement, Abbott shall be solely responsible for all costs associated with preparing, filing, prosecuting and maintaining Abbott Co-Owned Patents and Abbott Only Patents. In the event Abbott desires to abandon prosecution or maintenance of any patent application or patent within the Abbott Only Patents in any country or region, it shall, within sufficient time, offer to permit Arcadia to assume the prosecution of such patent application or the maintenance of such patent. If Arcadia elects to assume the same, it shall have the right to offset the full cost of such maintenance and prosecution against the royalty otherwise owed to Abbott from Net Sales in such country or region.

(e) **Enforcement of Abbott Patents**. In the event Abbott or Arcadia have reason to believe that a third person may be infringing any of the Abbott Co-Owned Patents, Abbott Only Patents or Joint Patents, such Party shall promptly notify the other Party in writing. Except as set forth in Section 2(b), Abbott shall have the option, in its sole discretion, to enforce the Abbott Co-Owned Patents, Abbott Only Patents or Joint Patents, through legal action or otherwise, and Arcadia shall cooperate with Abbott in such enforcement. Such cooperation shall include, but not be limited to, complying with discovery requests, providing access to potential witnesses, and taking such other actions as are reasonably required to institute and

prosecute any action brought by Abbott. Arcadia shall provide such assistance at no charge to Abbott.

In the event Abbott elects not to enforce the Abbott Only Patents or Joint Patents within three (3) months after notice of the possible infringement is given between Abbott and Arcadia, Arcadia may enforce the Abbott Only Patents or Joint Patents, in its own name or, if required by law, jointly with Abbott, at its own expense and on its own behalf, in such country or region. Abbott shall cooperate with Arcadia in any such action. Such cooperation shall include, but not be limited to, complying with discovery requests, providing access to potential witnesses, and taking such other actions as are reasonably required to institute and prosecute any action brought by Arcadia. Abbott shall provide such assistance at no charge to Arcadia.

Any damage award or monetary settlement shall be shared by Abbott and Arcadia as follows. In the event that the action is brought by either Party in the name of Arcadia or Abbott, then each Party shall be reimbursed for their out-of-pocket costs associated with the litigation, including any and all legal fees. In the event that Abbott brings the action, then Abbott shall be entitled to the remaining amount of any such award or settlement. In the event that Arcadia brings the action, then Arcadia shall be entitled to the remaining amount of any such award or settlement. In the event that the action is brought jointly by Arcadia and Abbott, the remaining amount of any such award or settlement shall be divided equally between Arcadia and Abbott.

Arcadia may not settle any such claim or suit in any manner that would adversely affect the Abbott Co-Owned Patents or Abbott Only Patents. Abbott may not settle any such claim or suit in any manner that would adversely affect the rights granted to Arcadia under the Abbott Co-Owned Patents or Abbott Only Patents.

6. RESEARCH PROJECT; REGULATORY MATTERS

(a) Transgenic Oil Development. Arcadia shall use reasonable commercial efforts to develop and produce Transgenic Oil in accordance with the Research Plan and shall use commercially reasonable efforts to commercialize and develop the market for Transgenic Oil. Arcadia shall assume and retain responsibility for commercial development and production of oils with one or more of GLA, DGLA or ARA oil profiles required by Abbott as reflected in the Research Plan, and for obtaining the necessary Regulatory Approval as well as approvals in

---

those countries where it is financially and technically feasible and mutually agreeable to both Parties, to use commercially reasonable efforts to establish that such plants and their oils with the oil profiles required by Abbott are safe for commercial distribution and Arcadia shall share such documentation with Abbott. Each Party will be responsible for any additional regulatory requirements that may be necessary to market products that utilize Transgenic Oil within its respective fields of use (such as safety or efficacy for a specific intended consumer population).

For example, and without limitation, Abbott shall comply with all applicable present or future laws, regulations, directives, instructions, directions or rules of any competent governmental or regulatory authority within the United States with respect to the use of ARA Transgenic Oil in Infant Formula in the United States, and Abbott shall secure any required government or regulatory approval(s) applicable to the same. Abbott may, but is not obligated to, secure any governmental or regulatory approval with respect to the use of ARA Transgenic Oil in Infant Formula in any country or countries outside of the United States. Abbott agrees to make available to Arcadia all details of its regulatory submissions, including data, and shall allow Arcadia to use the same in connection with obtaining regulatory approval(s) outside the United States.

(b) Third Party Rights and Arcadia Improvements. Arcadia shall be responsible for obtaining any Third Party intellectual property rights to the extent commercially feasible that are necessary and appropriate for the development and production of Transgenic Oil under the Research Project and for commercialization of Transgenic Oil. If a patent infringement suit is brought or threatened, by a Third Party alleging that Arcadia's production, manufacture or sale of Transgenic Oil or finished product containing Transgenic Oil infringes the patent rights of that Third Party and cause of action could not be asserted but for one, or more, of the nucleotide sequences provided to Arcadia by Abbott under this Agreement, then the following provision will apply. Arcadia, at its option and own expense, may defend or settle such suit. Arcadia shall be entitled to set-off against any royalty payable to Abbott any damages awarded against Arcadia by a court of competent jurisdiction, any consideration, whether monetary or non-monetary, paid by Arcadia to settle such suit, and legal expenses associated with defending such suit.

The foregoing right of set-off shall not exceed [...*...] percent ([...*...]%) of the royalty payable under Section 4. Such set-off of royalty shall only apply to the specific nucleotide sequence(s) and any plant(s), seed(s), or oil(s) which contain or were produced using said sequence(s) that infringe the patent rights of that Third Party. Abbott shall have the right, but not the obligation, to resolve any Third Party intellectual property rights related to any Abbott nucleotide sequences supplied under this Agreement that are necessary and appropriate for the development and sale of Transgenic Oil, at Abbott's sole cost, except where such settlement may or actually does impair Arcadia's rights under this Agreement.

The Parties acknowledge that this set-off is only applicable to Third Party patents involving the nucleotide sequences licensed by Abbott to Arcadia under this Agreement. This provision does not apply to any other Third Party patent that may be potentially relevant to the production or sale of Transgenic Oils such as claims to promoters, germplasms, seeds, etc. The Parties agree that these other Third Party patents are solely Arcadia's financial responsibility except for any Third Party intellectual property rights concerning one or more of the nucleotide sequences under the Abbott Co-Owned Patents or Abbott Only Patents or Know-How as set forth in the first paragraph of this section.

(c) Development Committee. Arcadia and Abbott shall establish a development committee (the "Development Committee") comprised of no more than three (3) representatives of each of Arcadia and Abbott. The Development Committee shall be chaired by a member thereof designated from time to time by Arcadia. The Development Committee shall oversee the Research Plan, Milestones and development and production of plants and microorganisms that produce Transgenic Oil in accordance with the Research Plan. The Development Committee may revise the Research Plan and the Milestones as deemed necessary and appropriate by unanimous written consent of all members. Meetings of the Development Committee shall be at least biannual and at such times and places or in such form (e.g., in person, telephonic or video conference) as the members of the Development Committee shall determine. Representatives of both Parties shall be present at any meeting of the Development Committee. Decisions of the Development Committee shall be made by a written consent signed by all six (6) members thereof. The Development Committee shall keep minutes of its deliberations setting forth, among other matters, all proposed actions and all votes thereon. All records of the Development Committee shall at all times be available to both Parties. The Development Committee by unanimous consent may delegate to one Party or to a specific representative the authority to make certain decisions. The Development Committee may revoke such authority by the written consent of four members. All disagreements within the Development Committee shall be subject to the following:

(i) The members of the committee will endeavor in good faith for a period of not more than ninety (90) days to attempt to resolve the disagreement;

(ii) If the members of the committee are unable to resolve the disagreement by the end of such period, the committee shall promptly present the disagreement to the President of Ross Products Division and the President of Arcadia or their respective designees, and the two executives shall endeavor to resolve the disagreement for a period of not more than thirty (30) days;

(iii) If the two executives are unable to resolve this disagreement, the disagreement shall be submitted for ADR as provided in Section 12(a).

(d) **Clinical Trials**. Arcadia shall be responsible for any and all clinical trials in connection with obtaining Regulatory Approval of Transgenic Oil as deemed necessary and

appropriate by the Development Committee. Abbott may also conduct clinical trials on Transgenic Oil for use in humans and, until the last to occur of the first Commercial Sale or conclusion of all Milestones, Abbott will share the summary outcomes of such clinical trial with Arcadia, provided, that prior to disclosing the summary outcomes of such clinical trial (i) Abbott shall, in its sole discretion, determine whether to obtain intellectual property protection over the study and its results, (ii) Abbott shall, in its sole discretion, determine when and what portions of the clinical trial to disclose to Arcadia, and (iii) Arcadia shall execute a confidentiality agreement covering all information provided by Abbott under this Section 6(d). Notwithstanding the foregoing, and subject to any restrictions that Abbott may have on its disclosure, upon Arcadia's request, Abbott will provide to Arcadia clinical trial information to the extent that such information is required or would be useful in obtaining Regulatory Approval, and provided that Arcadia shall execute a confidentiality agreement covering all such information provided by Abbott. Arcadia may also conduct clinical trials on Transgenic Oil for use in non-humans and until the later to occur of first Commercial Sale or achievement of all Milestones, Arcadia will share the summary outcomes of such clinical trials with Abbott, provided, that prior to disclosing the summary outcomes of such clinical trial (i) Arcadia shall, in its sole discretion, determine whether to obtain intellectual property protection over the study and its results, (ii) Arcadia shall, in its sole discretion, determine when and what portions of the clinical trial to disclose to Abbott, and (iii) Abbott shall execute a confidentiality agreement covering information provided under this Section 6(d). Notwithstanding the foregoing, each Party shall provide notice to the other Party of clinical trials conducted by the Party if the other Party's rights or financial interests could be materially adversely affected by a negative outcome of such clinical trial.

(e) **Milestones**. Each Party shall use commercially reasonable efforts to meet their Milestones set forth in Exhibit B. The Development Committee may revise the Milestones and the timeframe for completion of such Milestones by unanimous written consent of all members, each acting reasonably and in good faith. In deciding whether it is necessary and appropriate to revise the Milestones or the timeframe for completion, the Development Committee shall take into consideration the scientific, technical, development and regulatory difficulties encountered and likely to be encountered as well as the costs of over coming such difficulties in light of the

market and profit potential of Transgenic Oils. Further, if the ability of a Party to achieve any given Milestone is dependant on the achievement by the other Party of another Milestone that is a prerequisite or precursor to the given Milestone, then the applicable timeframe for achieving any such given dependant Milestone may be extended by unanimous decision of the Development Committee.

7. CONFIDENTIALITY

(a) **Confidentiality**. Neither Party shall use or disclose any Confidential Information received by it pursuant to this Agreement without the prior written consent of the other. This obligation will continue during and for a period of five (5) years after expiration or earlier termination of this Agreement.

(b) **Disclosure**. Nothing contained in this Section shall be construed to restrict the Parties from disclosing Confidential Information without the written consent of the other Party as required:

(i) for regulatory, tax or customs reasons;

(ii) for audit purposes, subject to the confidentiality obligations contained herein;

(iii) by Court order or other government order or request, as long as reasonable efforts have been made to assure its confidentiality or the other Party is timely notified to make such efforts; or to accounting, tax and legal advisors and independent consultants who are under a duty of confidentiality consistent with the terms of this Agreement and who are performing services related to this Agreement for either Party; to Affiliates and sublicensees who are under a duty of confidentiality consistent with the terms of this Agreement for the purpose of exercising its rights or fulfilling its obligations under this Agreement; or

(iv) for Arcadia to disclosure specifications for Transgenic Oil to Third Parties for purposes of selling Transgenic Oil as permitted hereunder, provided that Arcadia shall not disclose any of Abbott's Transgenic Oil specifications.

8. SUPPLY OF TRANSGENIC OIL

(a) Supply of Abbott Requirements. Subject to the price provisions of Section 8(b), 8(c) and 8(d) and availability of Abbott Transgenic Oil, during the term of this Agreement, if Arcadia develops an Abbott Transgenic Oil for which Abbott has obtained all required additional regulatory approvals (above and beyond Regulatory Approval) for use of such Abbott Transgenic Oil in products within the Abbott Fields, then Abbott shall purchase from Arcadia, and Arcadia shall supply to Abbott, one hundred percent (100%) of Abbott's requirements of Abbott Transgenic Oil, subject to such Abbott Transgenic Oil satisfying all applicable regulatory requirements and gaining a reasonable level of consumer acceptance as determined by Abbott in its sole reasonable discretion. Abbott may purchase and Arcadia shall supply Abbott's orders of Abbott Transgenic Oil for use in any other current or future Abbott product outside the Abbott Fields, under the terms and conditions of this Agreement.

(b) Price of GLA and/or DGLA Transgenic Oil for Abbott Fields. The supply price for Abbott Transgenic Oil containing GLA and/or DGLA for inclusion in products within the Abbott Fields will be determined at least three (3) months prior to the beginning of the field planting period for each crop cycle that will be used to produce such Abbott Transgenic Oil. The supply price of such Abbott Transgenic Oil shall be determined as follows:

(i) Bids for commodity refined, bleached, and deodorized oil, in drum quantities FOB refinery, from the species canola or safflower to be used to produce the GLA and/or DGLA Transgenic Oil will be obtained by Arcadia from three qualified suppliers agreed to by Arcadia and Abbott. Arcadia shall provide Abbott with copies of the bids from all three suppliers ("Reference Price"). The average of the three bids will be multiplied by [...*...] if canola oil is used, or [...*...] if safflower oil is used. Such Abbott Transgenic Oil will be supplied in drum quantities, FOB refinery.

(ii) Notwithstanding the foregoing, the supply agreement shall provide terms that will allow the supply price for such Abbott Transgenic Oil to be adjusted in the following circumstances:

(A) In the event that the transgenic plant varieties that produce the GLA and/or DGLA Transgenic Oil yield less than [...*...] percent ([...*...]%) of the average yield of the commodity crop (canola or safflower) used to produce such Transgenic Oil, in the area of production, then Abbott and Arcadia will negotiate in good faith to make the

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

appropriate adjustment to the supply price. The average yield of the commodity crop will be based on statistically valid replicated yield trials that include the variety used to produce such Transgenic Oil and the three leading commodity varieties in the area of actual production.

(B) In the event that crushing of the seed used to produce the GLA and/or DGLA Transgenic Oil and refining of Transgenic Oil do not occur at the same facility, then any freight costs associated with transporting crude Transgenic Oil to a refinery will be added to the supply price.

(C) In the event that physical or chemical factors associated with the GLA and/or DGLA Transgenic Oil cause crushing and/or refining losses that vary by more than [...*...] percent ([...*...]%) from industry averages for the reference commodity oil, then Abbott and Arcadia will negotiate in good faith to make the appropriate adjustments to the supply price.

(D) In the event that Abbott specifications, other than those for fatty acid composition, for the GLA and/or DGLA Transgenic Oil vary significantly from the industry norm for oil from the reference crop, and such variances have the effect of increasing physical losses or manufacturing costs, then Abbott and Arcadia will negotiate in good faith to make the appropriate adjustments to the supply price.

(E) In the event that the supply price for Abbott Transgenic Oil as calculated herein would result in a loss for Arcadia, then Abbott and Arcadia will negotiate in good faith to make adjustments to the supply price.

(c) Price of ARA Transgenic Oil for Abbott Fields. The Supply Price for ARA Transgenic Oil for inclusion in products within the Abbott Fields shall be [...*...] dollars ($[...*...]) per pound, provided that Abbott fulfills its commitment to provide to Arcadia at least [...*...] dollars ($[...*...]) in research funding that Abbott provides to Arcadia toward the production of ARA Transgenic Oil in Safflower plants (including payments set forth in Exhibit B). Provided, however, that in the event that Abbott provides additional research funding toward the production of ARA Transgenic Oil, the Supply Price for ARA Transgenic Oil shall be renegotiated so that it is below [...*...] dollars ($[...*...]) per pound. For avoidance of doubt, regardless of Abbott's funding after 2007, Arcadia shall continue to develop Transgenic Oil (including ARA Transgenic Oil) in accordance with the Agreement.

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

If the amount of ARA in the ARA Transgenic Oil is other than forty percent (40%), the price per pound shall be modified proportionally. For example, if Arcadia produces an ARA Transgenic Oil with twenty percent (20%) ARA, the price per pound would be [...*...] per pound.

(i) Notwithstanding the supply price provided herein, the supply price to Abbott for ARA Transgenic Oil to be used in an Infant Formula product shall not exceed the discounted amount listed in column two of the table below, wherein the stated discount is taken from the lowest price that ARA Transgenic Oil in like product concentrations is sold to a Third Party for the purpose of producing Infant Formula. The supply price to Abbott for ARA Transgenic Oil to be used in an Abbott Field other than Infant Formula shall not exceed the discounted amount listed in column three of the table below, wherein the stated discount is taken from the lowest price that ARA Transgenic Oil is sold in like sales quantities, product concentrations, and quality specifications.

Annual non-Abbott Sales Volume – pounds of ARA Transgenic Oil (40% ARA)	Discount - % below lowest price to Third Party (Infant Formula)	Discount - % below lowest price to Third Party (non-Infant Formula)

Up to [...*...]	[...*...]	[...*...]
up to [...*...]	[...*...]	[...*...]
>[...*...]	[...*...]	[...*...]

Notwithstanding the ARA Transgenic Oil supply price stated above, should the concentration of ARA in the ARA Transgenic Oil be other than forty percent (40%), the annual sales volumes shall change proportionally. For example, in the event that Arcadia produces an ARA Transgenic Oil that contains a concentration of twenty percent (20%) ARA, the sales volumes set forth in the chart above would be doubled, so that, for example, to the first [...*...] pounds of ARA Transgenic Oil sold to Abbott would be at a price at least [...*...] percent ([...*...]%) lower than the lowest price to any Third Party for the purpose of producing Infant Formula.

(d) **Price of Transgenic Oil outside Abbott Fields**. Abbott may purchase Transgenic Oil produced by Arcadia for use in products outside of the Abbott Fields at prices to be negotiated in good faith at the relevant time but subject to the following limitations. If during the term of this Agreement Arcadia produces and sells such Transgenic Oil of comparable grade

and quality and in similar quantities from the same production run to both a Third Party and to Abbott, at a supply price to Abbott greater than the supply price to the third party, Abbott's supply price shall be reduced to such lower price.

(e) **Terms of Supply of Transgenic Oil**. If supply of the Abbott Transgenic Oil is desired by Abbott or required under this Section 8, Abbott and Arcadia shall enter into a supply agreement with terms and conditions that are consistent with this Agreement. The supply agreement will, in addition to the foregoing, contain such other terms and conditions as are reasonable and customary in supply agreements for similar products including, without limitation, limitation of liability, warranties, disclaimer of implied and express warranties, and indemnification provisions. The supply agreement shall provide Abbott with the right to obtain the Abbott Transgenic Oil from an alternative supplier in the event that Arcadia cannot supply one hundred percent (100%) of Abbott's requirements of Abbott Transgenic Oil. Abbott acknowledges that Transgenic Oil may be produced from a crop and as such the timing of orders for and delivery of Transgenic Oils will be dependent upon the crop cycle of crop used, including without limitation, the growing season of such crop. Arcadia will grant Abbott the royalty-free right to use any trademarks that Arcadia may obtain for any Transgenic Oil wherein such trademarks identify the Transgenic Oil as an ingredient and Abbott may mark with the trademark Abbott products containing such Transgenic Oil as an ingredient. The execution of a supply agreement is not a condition precedent to any of the rights granted to Abbott in this Agreement.

(f) **Audit Rights**. In the event that the Abbott Transgenic Oil purchased by Abbott pursuant to Section 8(b) or 8(c) is not distinguishable from Transgenic Oil purchased by Abbott pursuant to Section 8(d) by chemical analysis of the product(s) incorporating such oils, Abbott, its Affiliates and sublicensees (if any) shall keep adequate records in sufficient detail to enable determination of which Abbott products included oil purchased by Abbott pursuant to Section 8(b) or 8(c) and which Abbott products included oil purchased by Abbott pursuant to Section 8(d). Said records shall be maintained during and for a period of three (3) years following the termination of this Agreement. Upon fifteen (15) days advance written notice, said records may be inspected by an accountant selected and retained at Arcadia's expense and approved by Abbott, such approval not to be unreasonably withheld. Such examination shall be conducted

no more than once annually upon request by Arcadia, during regular business hours and in such a manner as not to interfere with Abbott's normal business activities. Arcadia shall require such accountant to undertake to preserve the confidentiality of all information learned or obtained in connection with such audit; provided, however, the accountant shall report to Arcadia as to whether the products in question included oil purchased by Abbott pursuant to Section 8(b) or 8(c) and which Abbott products included oil purchased by Abbott pursuant to Section 8(d).

9. TERM AND TERMINATION

(a) **Term**. Unless otherwise terminated as herein provided, this Agreement shall commence on the Effective Date and shall remain in full force and effect, on a country by country basis, until the last Valid Claim of any patent, including any extensions or re-issues thereof, in each country expires. Upon expiration of such patent, on a country by country basis, the licenses granted under Sections 2(a), 2(b) and 2(c) with respect to such country shall be thereafter paid-up, perpetual and royalty-free. The Original Agreement and First Amendment thereto are herby incorporated into this Agreement and superseded by any terms of this Agreement that are in conflict with those prior agreements.

(b) **Early Termination by Either Party**. A Party may terminate this Agreement by giving to the other Party sixty (60) days prior written notice upon the bankruptcy or the insolvency of the other Party.

(c) **Early Termination by Arcadia**. Arcadia may terminate this Agreement by giving to Abbott sixty (60) days prior written notice in the event of one of the following:

(i) upon the material breach of this Agreement by Abbott if the breach is not cured within sixty (60) days after written notice thereof to Abbott.

(ii) where Arcadia determines, in the exercise of good faith, that it is commercially or technically infeasible to continue this Agreement. Commercial or technical infeasibility shall include, but not be limited to, a determination that (A) the costs of continuing to develop the products or technologies, or to produce and/or market the products and technologies contemplated by this Agreement exceed the probable return; (B) Third Party rights impede the freedom to operate and are commercially impractical to license or work around; (C)

the development and/or production of Transgenic Oils is technically infeasible; or (D) obtaining Regulatory Approval for Transgenic Oils is commercially impractical. With the written notice of termination pursuant to this Section 9(c), Arcadia shall provide to Abbott for informational purposes a statement of why Arcadia believes continuing this Agreement is technically or commercially infeasible including material facts and analyses upon which such belief depends.

(iii) where Arcadia determines, in the exercise of good faith, that it is commercially or technically infeasible to continue to develop and/or produce ARA Transgenic Oil, GLA Transgenic Oil, and/or DGLA Transgenic Oil, this Agreement shall be deemed terminated with respect to that particular Transgenic Oil, and the provisions of Section 9(e)(ii), "License to Abbott," shall apply with respect to that particular Transgenic Oil only, unless termination of that one portion would make it technically infeasible to continue the other programs in which case this Agreement would be terminated in its entirety. Commercial or technical infeasibility shall include, but not be limited to, a determination that (A) the costs of continuing to develop the products or technologies, or to produce and/or market the products and technologies contemplated, exceed the probable return; (B) third party rights impede the freedom to operate and are commercially impractical to license or work around; (C) the development and/or production of the particular Transgenic Oil is technically infeasible; or (D) obtaining Regulatory Approval for the particular Transgenic Oil is commercially impractical. With the written notice of termination pursuant to this Section 9(c), Arcadia shall provide to Abbott for informational purposes a statement of why Arcadia believes continuing the particular Transgenic Oil project is technically or commercially infeasible including material facts and analyses upon which such belief depends.

(d) **Early Termination by Abbott**. Abbott may terminate this Agreement by giving to Arcadia sixty (60) days prior written notice if:

(i) Upon the failure of Arcadia to issue a recommendation on the selection of plant lines for field trials within the time frame set forth in the Milestones (namely, Milestone [...*...] in Exhibit B), which Abbott acknowledges has been met as of the Effective Date, and has failed to substantially cure such failure sixty (60) days after receipt of written notice thereof; or

(ii) Upon the failure of Arcadia to obtain Regulatory Approval within the timeframe set forth in the Milestones (namely, Milestone [...*...] in Exhibit B), and has failed to

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

substantially cure such failure sixty (60) days after receipt of written notice thereof; provided, however, that Abbott may not terminate this Agreement pursuant to this Section 9(d) if Arcadia's failure under 9(d)(i) or 9(d)(ii) is due to a delay caused by a force majeure event as set forth in Section 12(b).

(iii) Upon the failure of Arcadia to issue new development and regulatory timeline plans for the ARA Transgenic Oil (namely, Milestone [...*...] in Exhibit B) and has failed to substantially cure such failure within sixty (60) days after receipt of written notice thereof will be cause for termination by Abbott of this Agreement with respect to the ARA Transgenic Oil, and the provisions of Section 9(e)(ii), "License to Abbott," shall apply with respect to ARA Transgenic Oil only.

(iv) Upon the failure of Arcadia to meet any future Milestones that the Development Committee agrees will become Milestones that, if not achieved will be a cause for termination by Abbott of this Agreement with respect to the ARA Transgenic Oil, and the provisions of Section 9(e)(ii), "License to Abbott," shall apply with respect to ARA Transgenic Oil only.

(e) **Consequences of Termination**.

(i) Survival of Liability.

Termination or expiration of this Agreement through any means and for any reason shall not relieve the Parties of any obligation accruing prior thereto and shall be without prejudice to the rights and remedies of either Party with respect to any antecedent breach of any of the provisions of this Agreement.

(ii) License to Abbott**.**

Upon termination of this Agreement pursuant to Section 9(c)(ii), Section 9(b) caused by bankruptcy or insolvency of Arcadia, or Section 9(d), Arcadia shall, to the extent legally permissible, grant to Abbott an option for a non-exclusive, royalty-bearing license, with the right to sublicense, in the Territory, to all necessary and appropriate background patents, Know How, Arcadia Improvements and all data and information actually used by Arcadia related to producing, obtaining Regulatory Approval for marketing of, manufacture, and use of a Transgenic Oil, including without limitation, trade secrets, technical information, data from

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

clinical and pre-clinical studies, regulatory submissions, methods of manufacture, factual knowledge, expertise, assembly and packaging knowledge, specifications, testing programs, testing data, proprietary tools or other proprietary information, in each case derived from or developed under the Research Project

to make, have made, use, import, export, sell and offer to sell Transgenic Oil developed hereunder. The royalty rate for such license shall not exceed [...*...] percent ([...*...]%) of Abbott's net sales or other exchange for value of the Transgenic Oil, but if no marketable application for the Transgenic Oil exists, such royalty shall be calculated as set forth in Section 4(c) above. If Arcadia elects not to proceed with commercialization of at least one Abbott Transgenic Oil, which shall be a cause for termination of this Agreement, Arcadia shall provide Abbott with the most developmentally advanced existing DNA constructs developed by or for Arcadia that contain the nucleotide sequences under the Abbott Co-Owned Patents or Abbott Only Patents and Know-How along with relevant data for use by Abbott. Depending upon the Parties progress under the Research Plan, Arcadia shall also provide Abbott with the following, to the extent developed by or for Arcadia or its licensee or assignee: (1) micro-organisms containing Abbott nucleotide sequences, and (2) seeds from existing plant transformants, containing DNA constructs for expression of Abbott genes for producing Transgenic Oil along with relevant data and information for use by Abbott. If termination occurs after the sale of Transgenic Oil to Abbott, then Arcadia will provide Abbott with, in addition to items one and two above, Transgenic Oil for up to twenty four (24) months at the price set forth in Section 8 above as specified in a binding purchase order and in the quantity specified in that order.

10. REPRESENTATIONS AND WARRANTIES

(a) **Abbott Representations and Warranties**. Abbott represents and warrants to Arcadia as follows:

(i) Exhibit A and Exhibit A-1 sets forth a complete and accurate list of patents and patent applications that are either solely owned or jointly owned, solely controlled, or licensed to Abbott, or jointly controlled by Abbott and managed by Ross Products Division that pertain to GLA, DGLA, or ARA production in plant seeds and tissues or by microbial fermentation as of the date of this Agreement (not including patents and patent applications that

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

pertain to food compositions). To the best of Abbott's knowledge, each patent listed on Exhibit A and Exhibit A-1 is validly issued under the laws of the country which issued it. To the best of Abbott's knowledge, Abbott owns, co-owns or has a valid license with the right to sublicense the patents listed in Exhibit A and Exhibit A-1 and no challenge has been made to the validity of the patents. To the best of Abbott's knowledge, there are no actual or threatened claims by a Third Party against Abbott's ownership of, or proprietary rights to the Abbott Co-Owned Patents, Abbott Only Patents or Abbott Know-How. This Exhibit may be updated by Abbott to reflect new and additional patent filings.

(ii) To the best of Abbott's knowledge, there is no pending or threatened Third Party lawsuit, claim, action or demand which relates to the production of one or more of GLA, DGLA or ARA under the Abbott Co-Owned Patents or Abbott Only Patents.

(iii) Abbott has all necessary corporate power and authority to enter into this Agreement, perform its obligations hereunder and license the Abbott Co-Owned Patents or Abbott Only Patents. Abbott's performance and Arcadia's rights under this Agreement do not conflict with any other contract to which Abbott is bound, including, without limitation, the agreement between Abbott and Co-Assignee referenced in Section 2(h) of this Agreement.

(iv) To the best of Abbott's knowledge, there are no other Third Party patents or other proprietary rights specifically claiming rights to a nucleotide sequence under the Abbott Co-Owned Patents or Abbott Only Patents and Know-How for the production of one or more of GLA, DGA or ARA hereunder which would be infringed by the commercial exploitation in the Territory, by Arcadia or its Affiliates, of the Abbott Co-Owned Patents or Abbott Only Patents.

(v) Other than the patents and patent applications listed on Exhibit A and Exhibit A-1, Abbott represents and warrants that it is not the assignee, co-assignee, or licensee, of any patents, or patent applications, that would preclude Arcadia from exercising any of the rights granted hereunder. This representation and warranty should not be construed to cover Arcadia, its Affiliates, its sublicensees, or their respective customers' use, importation, exportation, selling, or offering to sell which occur outside the scope of the license granted in Section 2 above. Furthermore, this representation and warranty should be not be construed to cover Arcadia, its Affiliates, its sublicensees, or their respective customers' products, formulations, dosage forms and the like which contain Transgenic Oil if such products,

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

formulations, dosage forms and the like are outside the scope of the license granted in Section 2 above.

(vi) The Abbott Co-Owned Patents, Abbott Only Patents and Abbott Know-How are not subject to 35 U.S.C. § 200 et seq. ("March In" rights) and will remain free of such rights during the term of this Agreement.

(b) **Arcadia's Representations and Warranties**. Arcadia represents and warrants to Abbott as follows:

(i) The execution and delivery of this Agreement and the performance by Arcadia of the transactions contemplated hereby have been duly authorized by all necessary corporate actions.

(ii) Arcadia has all necessary corporate power and authority to enter into this Agreement and perform its obligations hereunder. Arcadia's performance under this Agreement does not conflict with any other contract to which it is bound.

(iii) Except to the extent of any limitations or restrictions contained in redactions not disclosed to Arcadia, Arcadia is aware of and has reviewed a redacted version of the License Agreement between Abbott and [...*...] for the production of DHA and/or EPA, and acknowledges receipt of information from Abbott that at the time of execution of the Original Agreement that [...*...] is producing DHA and/or EPA in experimental seed which contains one or more of GLA, DGLA or ARA as residual oils.

(iv) Arcadia has or will use reasonable best efforts to obtain all necessary and appropriate expertise and intellectual property for the development, commercialization and regulatory approval of Transgenic Oil.

(v) With regard to any Transgenic Oil supplied by Arcadia to Abbott pursuant to this Agreement and not pursuant to a future supply agreement, such Transgenic Oil shall be manufactured: (a) in accordance with relevant good manufacturing practices, (b) according to any specifications provided to Arcadia by Abbott, and (c) shall not, to the best of Arcadia's knowledge, infringe any Third Party patent or other Third Party intellectual property rights.

(c) No Additional Representation or Warranty. EXCEPT AS EXPRESSLY STATED IN THIS AGREEMENT, NEITHER PARTY MAKES ANY REPRESENTATION

OR WARRANTY AND EACH PARTY EXPRESSLY DISCLAIMS ANY AND ALL OTHER WARRANTIES, EXPRESS, IMPLIED OR OTHERWISE, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

11. INDEMNITY

(a) Indemnification by Abbott. Abbott shall indemnify and hold harmless Arcadia, its Affiliates and their respective officers, directors, employees and agents from and against claims, demands, liabilities, damages, losses and expenses, including reasonable attorney's fees and costs, actually incurred by the indemnified party arising out of or in connection with any lawsuit, claim, action or demand ("Claims") based upon (i) the negligence, recklessness, intentional misconduct or negligent or willful omissions of Abbott or its Affiliates; (ii) breach by Abbott or its Affiliates of the terms of, or the covenants, representations and warranties made by it in this Agreement; and (iii) use by or on behalf of Abbott or any of its Affiliates of any Transgenic Oil for clinical trials where such Claim is not due to the negligence, recklessness, intentional misconduct or negligent or willful omissions of, or breach by Arcadia or its Affiliates.

(b) Indemnification by Arcadia. Arcadia shall indemnify and hold harmless Abbott, its Affiliates and their respective officers, directors, employees and agents from and against claims, demands, liabilities, damages, losses and expenses, including reasonable attorney's fees and costs, actually incurred by the indemnified party arising out of or in connection with any Claims based upon (i) the negligence, recklessness, intentional misconduct or negligent or willful omissions of Arcadia or its Affiliates; (ii) breach by the Arcadia or its Affiliates of the terms of, or the covenants, representations and warranties made by it in this Agreement; (iii) manufacture by the Arcadia or any of its Affiliates of any Abbott Transgenic Oil which is not in compliance with the specification agreed upon by Abbott and Arcadia for such Abbott Transgenic Oil, and (iv) use by or on behalf of Arcadia or any of its Affiliates of any Transgenic Oil for clinical trials where such Claim is not due to the negligence, recklessness, intentional misconduct or negligent or willful omissions of, or breach by Abbott or its Affiliates.

(c) Indemnification Procedures. The foregoing indemnifications are subject to the following procedural requirements: the party seeking indemnification (x) shall promptly notify the indemnifying party in writing of any claims with respect to which the party seeking indemnification seeks such indemnification, and (y) will provide the indemnifying party with reasonable assistance and information with respect to such Claim. The indemnifying party shall have the right to control any legal action; provided, however, that the indemnifying shall not settle any claim or action or otherwise consent to an adverse judgment in a legal action subject to this Section 11(a) without the express written consent of the party seeking indemnification, such consent not to be unreasonably withheld. In addition, the indemnified party shall have the right to employ separate counsel and participate in the defense of any claim or action.

(d) Limitations on Liability. EXCEPT FOR THIRD PARTY CLAIMS COVERED UNDER SECTION 11(a) OR 11(b), IN NO EVENT SHALL EITHER PARTY, ITS AFFILIATES OR ANY OF ITS OR THEIR DIRECTORS, OFFICERS, EMPLOYEES OR AGENTS BE RESPONSIBLE OR LIABLE FOR ANY INDIRECT, INCIDENTAL, CONSEQUENTIAL, SPECIAL, EXEMPLARY OR PUNITIVE DAMAGES, OR FOR ANY LOSS OF PROFITS, LOSS OF REVENUE, LOSS RESULTING FROM INTERRUPTION OF BUSINESS OR LOSS OF USE OR DATA, EVEN IF THAT PARTY, ITS AFFILIATES OR ANY OF THEIR DIRECTORS, OFFICERS, EMPLOYEES OR AGENTS HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES AND NOTWITHSTANDING ANY FAILURE OF ESSENTIAL PURPOSE OF ANY LIMITED REMEDY OF ANY KIND, UNDER ANY CONTRACT, NEGLIGENCE, STRICT LIABILITY OR OTHER THEORY, ARISING OUT OF OR RELATING IN ANY WAY TO THIS AGREEMENT OR ITS IMPLEMENTATION.

12. MISCELLANEOUS

(a) Dispute Resolution. Abbott and Arcadia shall use their diligent efforts to resolve any disputes that arise between them related to this Agreement through good faith negotiation and agreement and, if good faith efforts to so negotiate and agree are unavailing within thirty (30) days, then by the end of such thirty-day period, the dispute shall be presented to the President of Ross Products Division and the President of Arcadia or their respective

designees, and the two executives shall endeavor to resolve the disagreement for a period of not more than thirty (30) days. Thereafter, if the respective Presidents are unable to resolve such dispute, such dispute shall be resolved by binding ADR under the procedures set forth in Exhibit D attached to this Agreement. Where

a dispute is referred to ADR, the results of such ADR shall be final and binding on the Parties and enforceable in any court of competent jurisdiction. Pending resolution of any dispute, both Parties shall continue to perform their respective obligations under this Agreement to the extent not the subject of the dispute.

(b) **Force Majeure**. Neither Party to this Agreement shall be liable for damages due to delay or failure to perform any obligation under this Agreement if such delay or failure results directly or indirectly from circumstances beyond the control of such Party. Such circumstances shall include, but shall not be limited to, acts of God, acts of war, acts of terrorists, civil commotions, riots, strikes, lockouts, acts of the government in either its sovereign or contractual capacity, perturbation in telecommunications transmissions, inability to obtain suitable equipment or components, accident, crop failures, fire, water damages, flood, earthquake, or other natural catastrophes. Delay or failure to perform any obligation hereunder caused by Force Majeure shall not constitute a breach of this Agreement.

(c) **Applicable Law**. This Agreement shall be construed under the laws of the State of Illinois, without regard to the principles of conflict of laws thereof. The Parties hereto shall adhere to the United States Export Administration Laws and Regulations, and neither Party shall export or re-export any Know-How or direct product of such information to any proscribed country listed in the United States Export Administration Regulations unless properly authorized by the United States Government.

(d) **Notices**. Notices required under this Agreement shall be in writing and sent by registered mail, by facsimile transmission, by nationally recognized overnight courier service, or by hand delivery, with written verification of receipt and date of receipt, to the respective Parties at the following addresses:

Notices to Abbott: Ross Products Division
625 Cleveland Ave.
Columbus, OH 43215
Attn: Vice President, Strategic Planning and Business Development
Facsimile: (614) 624-7030

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

With a copy to: Divisional Vice President, Domestic Legal Operations
Ross Products Division
[same address]
Facsimile: (614) 624-3074

If to Arcadia: Arcadia Biosciences, Inc.
202 Cousteau Place, Suite 200
Davis, CA 95616
Attn: President

With a copy to: Chief Legal Counsel
Arcadia Biosciences, Inc.
[same address]

or to such other address as either Party may designate by a notice given in compliance with this paragraph, and shall be deemed effective when received.

(e) **Entire Agreement**. This Agreement, including the exhibits hereto, constitutes the entire agreement between the Parties hereto and there are no representations, warranties or covenants relative hereto, which shall survive the execution of this Agreement unless fully set forth herein.

(f) **Assignability**. Neither this Agreement, nor the rights and obligations hereunder, are assignable or otherwise transferable without the prior written consent of the other Party, except this Agreement, may be assigned, without such consent, to either Party's successor of the business to which this Agreement relates, and provided further that either Party can transfer its rights and obligation to any of their wholly owned or majority owned subsidiaries or Affiliates, provided such assignee confirms in writing that it assumes all obligations hereunder.

(g) **Counterparts**. This Agreement may be executed in counterparts, each of which shall be enforceable against the Parties actually executing such counterparts, and all of which together shall constitute the instrument.

(h) **Severability**. If any provision of this Agreement is declared void or unenforceable by any judicial or administrative authority, of competent jurisdiction, such declaration shall not of itself nullify the remaining provisions of this Agreement. Consequently,

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

the Parties shall meet to determine the effect of any such declaration and any variations to this Agreement which are mutually desirable.

(i) **Waiver**. No waiver by either Party of any breach of any of the terms or conditions herein provided to be performed by the other Party shall be construed as a waiver of any subsequent breach, whether of the same or of any other term or condition hereof.

(j) **Headings**. Section headings contained in this Agreement are inserted for convenience of reference only, shall not be deemed to be a part of this Agreement for any purpose, and shall not in any way define or affect the meaning, construction or scope of any of the provisions hereof.

(k) **Survival**. The provisions of Section 1, 3, 5, 7, 9(e), 11, and 12, as well as any payment obligations which have accrued prior to the effectiveness of termination or expiration of this Agreement, shall survive termination or expiration of this Agreement.

[SIGNATURE PAGE FOLLOWS]

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

THEREFORE, the Parties hereto have caused this Agreement to be duly executed in their respective behalves as of the Effective Date.

ARCADIA BIOSCIENCES, INC.		ROSS PRODUCTS DIVISION ABBOTT LABORATORIES	
By:	/s/ Eric J. Rey	By:	/s/
Name:	Eric J. Rey (Print or Type)	Name:	 (Print or Type)
Title:	President & CEO	Title:	
Date:	7/25/07	Date:	
By:			
Name:	 (Print or Type)		
Title:			
Date:			

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

EXHIBIT A

ABBOTT AND [...*...] CO-OWNED PATENTS AND PATENT APPLICATIONS

	[...*...]	Title or Subject Matter	Patent No.	Pending Application Ser. No.	Pending Applications in Foreign Countries
A)	[...*...]	*M alpina* Delta 12, 6 and 5 Desaturase genes in plants	6,075,183		
	[...*...]			09/355,903	
	[...*...]			P980104974	Argentina
	[...*...]		AT E 297 994 T1		Austria
	[...*...]		720677		Australia
	[...*...]		0996732		Belgium
	[...*...]			PCT/US98/07421	Brazil
	[...*...]			2285939	Canada
	[...*...]		0996732		Switzerland
	[...*...]		DE 698 30 587 T2		Germany

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

	[...*...]	0996732		Denmark
	[...*...]		05012383.5	Europe
	[...*...]	0996732		Europe
	[...*...]	0996732		Spain
	[...*...]	0996732		Finland

	[...*...]		0996732		France
	[...*...]		0996732		United Kingdom
	[...*...]		0996732		Ireland
	[...*...]		0996732		Italy
	[...*...]		10-544175		Japan
	[...*...]		0996732		Luxembourg
	[...*...]		0996732		Monaco
	[...*...]		999328		Mexico
	[...*...]		0996732		Netherlands
	[...*...]		337459		New Zealand
	[...*...]		0996732		Portugal
	[...*...]		0996732		Sweden
B)	[...*...]	*M alpina* Delta 12 and 6 Desaturase genes	5,968,809		
	[...*...]		6,136,574		
	[...*...]			09/367,013	

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

[...*...]		6,410,288		
[...*...]		0975766		Austria
[...*...]		726807		Australia
[...*...]		0975766		Belgium
[...*...]			2285968	Canada
[...*...]		0975766		Switzerland
[...*...]		0975766		Germany
[...*...]		0975766		Denmark
[...*...]		0975766		Europe
[...*...]		0975766		Spain
[...*...]		0975766		Finland
[...*...]		0975766		France
[...*...]		0975766		United Kingdom
[...*...]		0975766		Greece
[...*...]		0975766		Ireland
[...*...]		0975766		Italy
[...*...]			10-544053	Japan
[...*...]		0975766		Luxembourg

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

	[...*...]		0975766		Monaco
	[...*...]		212281		Mexico
	[...*...]		0975766		Netherlands
	[...*...]		337457		New Zealand
	[...*...]		0975766		Portugal
	[...*...]		0975766		Sweden
C)	[...*...]	*M alpina* Delta 5 Desaturase gene	5,972,664		
	[...*...]		6,589,767		
	[...*...]		720725		Australia
	[...*...]			PI9809082-6	Brazil
	[...*...]			2286263	Canada
	[...*...]		1007691		Europe
	[...*...]			05012383.5	Europe
	[...*...]			10-544176	Japan
	[...*...]			99327	Mexico
D)	[...*...]	Delta 5 Desaturase genes in plants	6,051,754		

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

EXHIBIT A-1

ABBOTT SOLELY-OWNED PATENTS AND PATENT APPLICATIONS

A)	[...*...]		6,858,416		
	[...*...]		6,432,684		
	[...*...]		6,428,990		
	[...*...]		1141253		Austria
	[...*...]		780422		Australia
	[...*...]		1141252		Belgium
	[...*...]			2358543	
	[...*...]		1141252		Switzerland
	[...*...]		1141252		Cyprus
	[...*...]		69930165		Germany

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

	[...*...]		1141252		Denmark
	[...*...]		1141252		Europe
	[...*...]		1141252		Spain
	[...*...]		1141252		Finland
	[...*...]		1141252		France
	[...*...]		1141252		United Kingdom
	[...*...]		1141252		Greece
	[...*...]		1141252		Ireland
	[...*...]		1141252		Italy
	[...*...]		1141252		Luxembourg
	[...*...]		1141252		Netherlands
	[...*...]		1141252		Portugal
	[...*...]		1141252		Sweden
B)	[...*...]	Fungal Delta 6 and 5 Desaturase genes	6,635,451		
	[...*...]		7,067,285		
	[...*...]			10/431,952	
	[...*...]			11/800,631	
	[...*...]			Not yet avail. (f.d. = 5/7/07)	

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

	[...*...]			P020100289	
	[...*...]			2002309482	Australia
	[...*...]			PI0205508-2	Brazil
	[...*...]			2435685	Canada
	[...*...]			2736480.1	Europe
	[...*...]			2002-580031	Japan
	[...*...]		238474		Mexico
F)	[...*...]	Elongase genes from *M alpina*, mouse, human	6,403,349		
	[...*...]			10/912,446	
	[...*...]		7,070,970		
	[...*...]			09/379,095	
	[...*...]		6,913,916		
	[...*...]		6,677,145		

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

	[...*...]	768301		Australia
	[...*...]	2001277982		Australia
	[...*...]		2003243335	Australia
	[...*...]		PI0112680-6	Brazil
	[...*...]		PI0306655-0	Brazil
	[...*...]		2341336	Canada
	[...*...]		2417484	Canada
	[...*...]		2487095	Canada
	[...*...]		2002-2482	Chile
	[...*...]		1107-2003	Chile
	[...*...]		99943978.9	Europe
	[...*...]		3756242.8	Europe
	[...*...]		1108490.7	Hong Kong
	[...*...]		2000-567706	Japan
	[...*...]		2002-513885	Japan
	[...*...]		2004-510380	Japan
	[...*...]		PA/a/2004/000750	Mexico
	[...*...]		PA/a/2004/011902	Mexico

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

G)	[...*...]		7,211,656		
	[...*...]			11/621,446	
	[...*...]			2474894	Canada
	[...*...]			3710700	Europe
	[...*...]			2003-564192	Japan
	[...*...]			PA/a/2004/007588	Mexico
H)	[...*...]	Delta-6 Desaturase Gene		10/931,626	
	[...*...]			2005282793	Australia
	[...*...]			PCT/US/2005/030945	Brazil
	[...*...]			PCT/US2005/030945	Canada
	[...*...]			5806616.8	Europe
	[...*...]			PCT/US2005/030945	Japan
	[...*...]			MX/a/2007/002432	Mexico
	[...*...]			20071180	Norway
I)	[...*...]	Elongase Gene		11/601,544	

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

EXHIBIT B

Research Plan & Milestones

Milestone 1: [...*...] [...*...]	Responsibility: [...*...] Action: [...*...] [...*...]	Payment: [...*...] [...*...]
Milestone 2: [...*...] [...*...] [...*...]	Responsibility: [...*...] Action: [...*...]	
Milestone 3: [...*...] [...*...]	Responsibility: [...*...] Action: [...*...]	Payment: [...*...]

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

Milestone 4: [...*...] [...*...]	Responsibility: [...*...] Action: [...*...]	Payment: [...*...]
Milestone 5: [...*...] [...*...]	Responsibility: [...*...] Action: [...*...] [...*...] [...*...] [...*...]	

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

Milestone 6: [...*...] [...*...]	Responsibility: [...*...] Action: [...*...]	
Milestone 7: [...*...] [...*...]	Responsibility: [...*...] Action: [...*...] [...*...]	
Milestone 8: [...*...] [...*...]	Responsibility: [...*...] Action: [...*...]	
Milestone 9: [...*...] [...*...]	Responsibility: [...*...] Action: [...*...]	Payment: [...*...]
Milestone 10: [...*...] [...*...]	Responsibility: [...*...] Action: [...*...]	Payment: [...*...]
Milestone 11: [...*...] [...*...]	Responsibility: [...*...] Action: [...*...]	Payment: [...*...]

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

Milestone 12: [...*...] [...*...]	Responsibility: [...*...] Action: [...*...]	
Milestone 13: [...*...] [...*...]	Responsibility: [...*...] Action: [...*...]	Payment: [...*...]
Milestone 14: [...*...] [...*...]	Responsibility: [...*...] Action: [...*...]	Payment: [...*...]
Milestone 15: [...*...] [...*...]	Responsibility: [...*...] Action: [...*...]	Payment: [...*...]

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

Exhibit C

Royalty Table on Net Trait Fee

Abbott shall pay Arcadia a Royalty on Co-Assignee Oil sold in the field of Dietary Supplements based on the royalty table below, provided however, that in no event shall Abbott be liable to pay Arcadia more in Royalty hereunder that Abbott actually receives from Co-Assignee:

GLA Residual Range	Net Trait Fee Dietary Supplements	Net Trait Fee Other
[...*...]	[...*...]	[...*...]
[...*...]	[...*...]	[...*...]
[...*...]	[...*...]	[...*...]

"Dietary Supplements" means vitamins, minerals, herbs or other botanicals, amino acids, and other dietary substances that include a LC-PUFA developed through the use of the Abbott Co-Owned Patents licensed herein and are intended to supplement the diet by increasing the total dietary intake, or as any concentrate, metabolite, constituent, extract, or combination of these ingredients (§ 201(ff) of the FFDCA [21 USC § 321 (ff)]) and that are ingested in a tablet, capsule, powder, softgel, gelcap, or concentrated liquid form. A limitation being that Dietary Supplements are not represented as a conventional food or as the sole item of a meal or of the diet and that are labeled as "dietary supplements".

"Net Trait Fee" means the fee as calculated as follows the incremental fee collected for a plant product or oil product that is produced as a result of the utilization of Abbott Co-Owned Patents when that product is sold as compared to the market price of a comparable commodity oil or commodity plant product. For purposes of calculating the Net Trait Fee, values shall be determined in good faith based upon customary arms-length transactions in the relevant market. When referenced relative to commodity soybean oil, the prices quoted will be based on the prices given for such commodity oil and as published by the Wall Street Journal Online, Markets Data Center — Commodities & Futures. If a payment is made on a quarterly basis the average price will be based on the average price of such oil from the opening price and the closing price for the time period referenced.

Upon reasonable notice, but not to exceed once per year, Arcadia may request that Abbott conduct an audit of the books and records of Co-Assignee relating to the royalties due herein. In the event the accountant reports to Abbott that the Co-Assignee has underpaid the amounts due to Abbott by more than ten percent (10%), then (as between Abbott and Arcadia) Abbott shall bear the costs of such audit, otherwise, Arcadia will bear the costs of such audit. The auditing accountant, Abbott and Arcadia shall be bound to keep confidential the details of the business affairs of Co-Assignee and to limit disclosure of the results of any audit to the sufficiency of the accounts and the amount, if any, of a payment adjustment that should be made.

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

EXHIBIT D

Alternative Dispute Resolution

The Parties recognize that from time to time a dispute may arise relating to either Party's rights or obligations under this Agreement. The Parties agree that any such dispute shall be resolved in accordance with the provisions of Section 12(a) (Dispute Resolution) of this Agreement, and failing resolution thereunder, by the Alternative Dispute Resolution ("ADR") provisions set forth in this Exhibit, the result of which shall be binding upon the Parties.

To begin the ADR process, a Party first must send written notice of the dispute to the other Party for attempted resolution by good faith negotiations between their respective presidents (or their designees) of the affected subsidiaries, divisions, or business units within ninety (90) days after such notice is received (all references to "days" in this ADR provision are to calendar days). If the matter has not been resolved within ninety (90) days of the notice of dispute, or if the Parties fail to meet within such forty-five (45) days, either Party may initiate an ADR proceeding as provided herein. The Parties shall have the right to be represented by counsel in such a proceeding.

1. To begin an ADR proceeding, a Party shall provide written notice to the other Party of the issues to be resolved by ADR. Within thirty (30) days after its receipt of such notice, the other Party may, by written notice to the Party initiating the ADR, add additional issues to be resolved within the same ADR.

2. Within sixty (60) days following receipt of the original ADR notice, the Parties shall select a mutually acceptable neutral to preside in the resolution of any disputes in this ADR proceeding. If the Parties are unable to agree on a mutually acceptable neutral within such period, either Party may request the President of the CPR Institute for Dispute Resolution ("CPR"), 366 Madison Avenue, 14th Floor, New York, New York 10017, to select a neutral pursuant to the following procedures:

(a) The CPR shall submit to the Parties a list of not less than five (5) candidates within fourteen (14) days after receipt of the request, along with Curriculum Vitae for each candidate. No candidate shall be an employee, director, or shareholder of either Party or any of their subsidiaries or affiliates.

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

(b) Such list shall include a statement of disclosure by each candidate of any circumstances likely to affect his or her impartiality.

(c) Each Party shall number the candidates in order of preference (with the number one (1) signifying the greatest preference) and shall deliver the list to the CPR within seven (7) days following receipt of the list of candidates. If a Party believes a conflict of interest exists regarding any of the

candidates, that Party shall provide a written explanation of the conflict to the CPR along with its list showing its order of preference for the candidates. Any Party failing to return a list of preferences on time shall be deemed to have no order of preference.

(d) If the Parties collectively have identified fewer than three (3) candidates deemed to have conflicts, the CPR immediately shall designate as the neutral the candidate for whom the Parties collectively have indicated the greatest preference. If a tie should result between two candidates, the CPR may designate either candidate. If the Parties collectively have identified three (3) or more candidates deemed to have conflicts, the CPR shall review the explanations regarding conflicts and, in its sole discretion, may either (i) immediately designate as the neutral the candidate for whom the Parties collectively have indicated the greatest preference, or (ii) issue a new list of not less than five (5) candidates, in which case the procedures set forth in subparagraphs 2(a) - 2(d) shall be repeated.

3. No earlier than thirty (30) days or later than ninety (90) days after selection, the neutral shall hold a hearing to resolve each of the issues identified by the Parties. The ADR proceeding shall take place at a location agreed upon by the Parties. If the Parties cannot agree, the neutral shall designate a location other than the principal place of business of either Party or any of their subsidiaries or affiliates.

4. At least seven (7) days prior to the hearing, each Party shall submit the following to the other Party and the neutral:

(a) a copy of all exhibits on which such Party intends to rely in any oral or written presentation to the neutral;

(b) a list of any witnesses such Party intends to call at the hearing, and a short summary of the anticipated testimony of each witness;

(c) a proposed ruling on each issue to be resolved, together with a request for a specific damage award or other remedy for each issue. The proposed rulings and remedies

shall not contain any recitation of the facts or any legal arguments and shall not exceed one (1) page per issue.

(d) a brief in support of such Party's proposed rulings and remedies, provided that the brief shall not exceed twenty (20) pages. This page limitation shall apply regardless of the number of issues raised in the ADR proceeding.

Except as expressly set forth in subparagraphs 4(a) - 4(d) or as may be permitted by the neutral upon a showing of good cause, no discovery shall be required or permitted by any means, including depositions, interrogatories, requests for admissions, or production of documents.

5. The hearing shall be conducted on two (2) consecutive days and shall be governed by the following rules:

(a) Each Party shall be entitled to five (5) hours of hearing time to present its case. The neutral shall determine whether each Party has had the five (5) hours to which it is entitled.

(b) Each Party shall be entitled, but not required, to make an opening statement, to present regular and rebuttal testimony, documents or other evidence, to cross-examine witnesses, and to make a closing argument. Cross-examination of witnesses shall occur immediately after their direct testimony, and cross-examination time shall be charged against the Party conducting the cross-examination.

(c) The Party initiating the ADR shall begin the hearing and, if it chooses to make an opening statement, shall address not only issues it raised but also any issues raised by the responding Party. The responding Party, if it chooses to make an opening statement, also shall address all issues raised in the ADR. Thereafter, the presentation of regular and rebuttal testimony and documents, other evidence, and closing arguments shall proceed in the same sequence.

(d) Except for expert witnesses, when testifying, witnesses shall be excluded from the hearing until they testify.

(e) Settlement negotiations, including any statements made therein, shall not be admissible under any circumstances. Affidavits prepared for purposes of the ADR hearing also shall not be admissible. As to all other matters, the neutral shall follow the Federal Rules of Evidence regarding the admissibility of any other evidence.

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

6. Within seven (7) days following completion of the hearing, each Party may submit to the other Party and the neutral a post-hearing brief in support of its proposed rulings and remedies, provided that such brief shall not contain or discuss any new evidence and shall not exceed ten (10) pages. This page limitation shall apply regardless of the number of issues raised in the ADR proceeding.

7. The neutral shall rule on each disputed issue within fourteen (14) days following completion of the hearing. Such ruling shall adopt in its entirety the proposed ruling and remedy of one of the Parties on each disputed issue but may adopt one Party's proposed rulings and remedies on some issues and the other Party's proposed rulings and remedies on other issues. The neutral shall not issue any written opinion or otherwise explain the basis of the ruling.

8. The neutral shall be paid a reasonable fee plus expenses. These fees and expenses, along with the reasonable legal fees and expenses of the prevailing Party (including all expert witness fees and expenses), the fees and expenses of a court reporter, and any expenses for a hearing room, shall be paid as follows:

(a) If the neutral rules in favor of one Party on all disputed issues in the ADR, the losing Party shall pay 100% of such fees and expenses.

(b) If the neutral rules in favor of one Party on some issues and the other Party on other issues, the neutral shall issue with the rulings a written determination as to how such fees and expenses shall be allocated between the Parties. The neutral shall allocate fees and expenses in a way that bears a reasonable relationship to the outcome of the ADR, with the Party prevailing on more issues, or on issues of greater value or gravity, recovering a relatively larger share of its legal fees and expenses.

9. The rulings of the neutral and the allocation of fees and expenses shall be binding, non-reviewable, and non-appealable, except as permitted by law, and may be entered as a final judgment in any court having jurisdiction.

10. Except as provided in paragraph 9 or as required by law, the existence of the dispute, any settlement negotiations, the ADR hearing, any submissions (including exhibits, testimony, proposed rulings, and briefs), and the rulings shall be deemed Confidential Information. A court of competent jurisdiction shall have the authority to impose sanctions for unauthorized disclosure of Confidential Information.

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

COLLABORATIVE RESEARCH & DEVELOPMENT AGREEMENT

This COLLABORATIVE RESEARCH & DEVELOPMENT AGREEMENT ("Agreement") is made and entered into by and between Arcadia Biosciences, Inc., an Arizona corporation having a principal business address at 202 Cousteau Place, Suite 200, Davis, California 95616 ("Arcadia"), and Maharashtra Hybrid Seeds Co. Ltd. having a principal business address at Resham Bhavan, 4th Floor, 78 Veer Nariman Road, Mumbai - 400020, India, (hereinafter referred to as "Mahyco", which term shall mean and include its Affiliates). The parties to this Agreement are collectively referred to as the "Parties" and individually as a "Party". The Agreement shall be effective as of the Effective Date.

BACKGROUND

A. Arcadia is a plant biotechnology company with technologies, biomaterials, know-how and other technology assets ("Arcadia Technology") that carries out research in the area of nitrogen use efficiency in plants.

B. Mahyco is a seed company with research, product development and commercial assets and technologies in the areas of plant transformation, biotic and abiotic stress tolerance, insect tolerance, development and deployment of bioengineered crops and other technology assets ("Mahyco Technology") in crops including, but not limited to, rice (*Oryza sativa*).

C. Arcadia and Mahyco have an interest in creating a strategic relationship to develop rice (*Oryza sativa*) plants with enhanced properties related to nitrogen use efficiency suitable for commercialization in the Territory, based on certain Arcadia Technology and certain Mahyco Technology, and desire to work collectively to carry out a research, development and commercial program ("Program") to support that objective.

D. In connection with the Program, Arcadia desires to grant, and Mahyco desires to receive, an exclusive license to certain Arcadia technology relating to nitrogen use efficiency in plants for utilization in rice (*Oryza sativa*) throughout the Territory.

In consideration of the covenants, conditions, and undertakings hereinafter set forth, the receipt and sufficiency of which are acknowledged, it is agreed by and between the Parties as follows:

1. DEFINITIONS

1.1 "Affiliate" means any corporation, firm, limited liability company, partnership or other entity that directly or indirectly controls or is controlled by or is under common control with a Party. As used in this Section 1.1 and throughout the Agreement, "control" means ownership, directly or through one or more Affiliates, of fifty percent (50%) or more of the shares of stock entitled to vote for the election of directors, in the case of a corporation, or fifty percent (50%) or more of the equity interests in the case of any other type of legal entity, or status as a general partner in any partnership, or the power to direct or cause the direction of the management and the policies of a legal entity, whether through the ownership or possession of a majority of the outstanding voting or equity interest, or any other arrangement whereby a Party

controls or has the right to control the Board of Directors or equivalent governing body of a corporation or other entity, or if such level of ownership or control is prohibited in any country, any entity owned or controlled by or owning or controlling at the maximum control or ownership right permitted in the country where such entity exists.

1.2 "Arcadia Licensed Intellectual Property" means the Arcadia Patent Rights, the Arcadia NUE Technology, Materials, and Arcadia's interest in any and all Program IP.

1.3 "Arcadia NUE Technology" means (a) any inventions or discoveries conceived or reduced to practice by or on behalf of Arcadia prior to, on, or after the Effective Date relating to one or more Genes or Constructs that relates to NUE, as described in the Arcadia Patent Rights; (b) any inventions or discoveries relating to one or more Genes or Constructs relating to NUE and that were conceived or reduced to practice by or on behalf of Arcadia prior to, on, or after the Effective Date the practice of which would require a license to the Arcadia Patent Rights; and (c) any future developments, inventions, discoveries, know-how, trade secrets, or data that relate to one or more Genes or Constructs relating to NUE and that: (i) are conceived or reduced to practice by or on behalf of Arcadia, (ii) one with reasonable expertise in the area of plant biotechnology would reasonably deem necessary or useful to optimize the practice of the inventions or discoveries set forth in clauses (a) or (b) above, or of the inventions or discoveries embodied in one or more claims of the Arcadia Patent Rights, and (iii) are actually provided to Mahyco by Arcadia under this Agreement.

1.4 "Arcadia Patent Rights" means those patents and/or patent applications in the field of nitrogen use efficiency in plants (i) to which Arcadia has at any time during the Term of this Agreement the right to grant licenses or sublicenses, and (ii) which patents and/or patent applications are added to Exhibit A in writing by Arcadia. Arcadia Patent Rights shall include Arcadia's interest in Program IP relating to nitrogen use efficiency in plants.

1.5 "Arcadia Trait" means any biochemical, physiological, or physical attribute or phenotype of a cell, plant, or other organism, which trait is caused or regulated by one or more Genes, and which trait is expressed in plants incorporating or otherwise utilizing, including utilizing for the development of gene expression data or other data, the Arcadia Licensed Intellectual Property.

1.6 "Confidential Information" means (i) the terms and conditions of this Agreement (ii) any proprietary or confidential information or material, including all trade secrets, in tangible form disclosed hereunder that is marked as "Confidential" at the time it is delivered to the receiving Party, or (iii) proprietary or confidential information or material, including all trade secrets, disclosed orally hereunder that is identified as confidential or proprietary when disclosed, or that is identified as confidential in writing (including by facsimile or email) within thirty (30) days by the disclosing Party; *provided however,* that the above information shall not be deemed Confidential Information to the extent the receiving Party can establish by competent written proof that such information:

1.6.1 was already known to the receiving Party, other than under an obligation of confidentiality owed to the disclosing Party, at the time of disclosure;

1.6.2 was generally available to the public or otherwise part of the public domain at the time of its disclosure hereunder to the receiving Party;

1.6.3 becomes generally available to the public or otherwise part of the public domain after its disclosure and other than through any act or omission of the receiving Party in breach of this Agreement or any other relevant confidentiality agreement;

1.6.4 is independently developed by the receiving Party without reference to any Confidential Information disclosed by the disclosing Party; or

1.6.5 was subsequently disclosed to the receiving Party by a person other than the disclosing Party without breach of any legal obligation to the disclosing Party.

1.7 "Construct" means a nucleic acid molecule or the portion of a nucleic acid molecule that minimally contains at least a specified promoter element operably linked to a second specified element, which is to be expressed in a plant cell, and which modulates the expression of one or more Genes.

1.8 "Deregulated Transgenic Event" means a plant containing stably integrated in its genome one or more copies of a transgene causing or regulating an Arcadia Trait, wherein the arrangement of the transgenic DNA sequences within that insertion site(s) are consistent with obtaining domestic and international regulatory approvals, which approval(s) have been granted in at least one jurisdiction.

1.9 "Effective Date" means July 31, 2009.

1.10 "Efficacy" shall have the meaning established by the Program Committee. Fundamentally, "Efficacy" shall mean a commercially viable level of value creation, which shall be established by the Program Committee at the beginning of the Program, and which can be reviewed, and amended if deemed necessary, by the Program Committee throughout the duration of the Program.

1.11 "Event" means each instance (of genetic modification) of a genetically modified organism. For example, the same Gene or Construct inserted into a given individual plant genome at two (2) different locations along that plant's DNA would be considered two (2) different Events. Alternatively, two (2) different Genes or Constructs inserted into the same locus of two (2) same-species plants would also be considered two (2) different Events.

1.12 "Field of Use" means rice (*Oryza sativa*).

1.13 "First Successful Field Trial" means first demonstration of Efficacy in at least one (1) replicated field trial in accordance with an experimental design that will be established by the Program Committee and documented in the Program. The Parties hereto acknowledge and agree that since any field trials may require a permit from the local regulatory authorities, the First Successful Field Trial can be achieved only after receipt of such an approval as per local applicable laws in the Territory, and Mahyco shall not be penalized for any delay on the part of the relevant regulatory authorities.

1.14 "Gene" means DNA having a nucleotide sequence that encodes a single polypeptide, which DNA may also contain non-coding introns, which DNA may be in the form of genomic DNA that occupies a specific locus on a chromosome, or which alternatively may be in the form of cDNA in a nucleic acid construct, such as, but not limited to, a cloning vector or an expression vector.

1.15 "Greenhouse Proof of Concept" means demonstration of Efficacy in at least one (1) experimental test in a greenhouse environment in accordance with an experimental design that will be established by the Program Committee and documented in the Program. The Parties hereto acknowledge and agree that since any greenhouse trial may require a permit from the local regulatory authorities, Greenhouse Proof of Concept can be achieved only after receipt of such an approval as per local applicable laws in the Territory, and Mahyco shall not be penalized for any delay on the part of the relevant regulatory authorities.

1.16 "Identified Proven Event" means an Event for which the Program Committee agrees that the nature of the Construct and the nature of the insertion of the Construct achieves Efficacy in the Field of Use and has the ability to receive Regulatory Approval.

1.17 "Intellectual Property" means any and all right title and interest in, arising from, or relating to inventions, discoveries, ideas, know-how, works of authorship and confidential information, including copyrights, patents and patent applications (including any continuations, divisionals, continuations-in-part, reissues, or foreign equivalents based on any of the foregoing patents, patent applications or claims in respect thereof), plant breeders rights, plant variety registration certificates and applications for plant breeder rights, plant variety registration certificates (or foreign equivalents based on any of the foregoing rights, certificates or applications), trade secrets, trademarks, service marks, design marks, any registrations or applications relating to any of the foregoing, and any other rights of a similar nature or character.

1.18 "Licensed Product" means any plant, plant part, seed, grain or component or material derived therefrom, including any technique and/or process used for the development and use of the same: (i) that incorporates, contains, utilizes, is enabled by, or otherwise exploits the Arcadia Licensed Intellectual Property; or (ii) the making, using, selling or importing of which would, absent the licenses granted hereunder, infringe the Arcadia Patent Rights in any jurisdiction; or (iii) that otherwise incorporates or expresses an Arcadia Trait.

1.19 "Mahyco Intellectual Property" shall mean and include any and all right title and interest that Mahyco owns and/or controls (whether protectable or not) in, arising from, or relating to, inventions, discoveries, ideas, know-how, works of authorship and confidential information, including copyrights, patents and patent applications (including any continuations, divisionals, continuations-in-part, patents of addition, reissues, or foreign equivalents based on any of the foregoing patents, patent applications or claims in respect thereof), plant breeders rights / plant variety registration certificates and applications for plant breeder rights / plant variety registration certificates (or foreign equivalents based on any of the foregoing rights, certificates or applications), trade secrets, trademarks, service marks, design marks, any registrations or applications relating to any of the foregoing, and any other rights of a similar nature or character, including those in Mahyco Materials, Mahyco Technology and otherwise.

1.20 "Mahyco Materials" shall mean and include any and all Genes, Constructs, Events, seeds, plant parts, plants or planting material and other biological materials that are owned and/or controlled by Mahyco, and any and all mutants, constituents, progeny and derivatives of such materials (including, but not limited to, substances that constitute a functional subunit of, or product expressed by, the materials, such as subclones, protein expressed from DNA, RNA, or corresponding sequence information, antibodies, cells, plants, seeds, and parts thereof expressing such materials), as well as all Genes, Constructs, Events, seeds, biological materials, technical information, and any and all mutants, constituents, progeny and derivatives thereof that are developed, conceived, or produced by or on behalf of Mahyco, that Mahyco owns and/or controls. For purposes of this Agreement, all Mahyco Materials shall constitute Mahyco's Confidential Information and shall be subject to those terms and conditions of this Agreement governing the treatment of Confidential Information, including, but not limited to, Section 12. Notwithstanding the foregoing, and for purposes of clarity, "Mahyco Materials" shall not include any Genes, Constructs, Events, seeds and/or other biological materials or any mutants, constituents, progeny or derivatives of such materials, that fall within the scope of the definition of Materials set forth in Section 1.21, below.

1.21 "Materials" means any and all Genes, Constructs, Events, seeds and other biological materials that are provided by Arcadia to Mahyco, and any and all mutants, constituents, progeny and derivatives of such materials (including, but not limited to, substances that constitute a functional subunit of or product expressed by the materials, such as subclones, protein expressed from DNA, RNA, or corresponding sequence information, cell, plants, seeds, and parts thereof expressing such materials), as well as all Genes, Constructs, Events, seeds, biological materials, technical information, and any and all mutants, constituents, progeny and derivatives thereof that are developed, conceived, or produced by or on behalf of Mahyco using gene constructs, seeds and/or other biological materials or Confidential Information provided to Mahyco by Arcadia. For purposes of this Agreement, all Materials shall constitute Arcadia Confidential Information and shall be subject to those terms and conditions of this Agreement governing the treatment of Confidential Information, including, but not limited to, Section 12.

1.22 "Model Plant" means an *Arabidopsis thaliana* plant, *Oryza sativa* plant, or other plant organism used as a model system for research and development of Licensed Products.

1.23 "Net Trait Value" means the net Incremental Value realized by Mahyco, a Mahyco Affiliate, or a Sublicensee for a Licensed Product, which net Incremental Value is attributable to the Arcadia Licensed Intellectual Property. "Incremental Value" shall mean the *net value realized* by a Licensed Product minus the value attributable to the germplasm, or, in the case of a Licensed Product with stacked Traits, the germplasm and any Trait other than an Arcadia Trait. For calculating the net value realized, all returns, customer rebates, dealer incentives, volume discounts, cash discounts, discounts that respond specifically to local competitive situations, channel and marketing program costs, cooperative program costs, freight and insurance, and seed service fees shall be deducted on a pro rata basis across (i) the Arcadia Trait and germplasm (in the case of a Licensed Product containing only an Arcadia Trait) or (ii) the Arcadia Trait, germplasm, and Trait(s) other than Arcadia Trait (in the case of a Licensed Product with stacked Traits). Amounts paid to Mahyco Affiliates shall be deductible only to the extent that such amounts do not exceed amounts that otherwise would have been paid to a non-Affiliate third party in an arm's length transaction for the same or similar goods or services. For

purposes of calculating amounts due to Arcadia pursuant to the Commercial Value Sharing provisions of this Agreement, the value of any subsidies, rebates, tax credits, and the like received for a Licensed Product containing an Arcadia Trait and received specifically owing to the presence of such trait, shall be considered part of the net value realized. Moreover, in the event that the Licensed Products are sold or otherwise transferred to an Affiliate for a price lower than if they had been sold to a third party in an arm's length transaction, then the net value realized shall be calculated based upon the price that would have been charged if they had been sold to a third party in an arm's length transaction. For the avoidance of doubt, the Parties agree that the calculation of Net Trait Value shall not result in a payment by Mahyco that exceeds the Commercial Value Share appropriate for the stage of development of material provided, as set forth in the Commercial Value Sharing provisions of Section 6.4.

1.24 "Program IP" means all Intellectual Property developed, created, conceived or reduced to practice as a result of the Program.

1.25 "Regulatory Approval" means receipt of all necessary approvals from the appropriate regulatory authority whose purpose is to allow for the commercial production, culture or importation for food, feed, and industrial use in the jurisdiction governed by such regulatory authority, to effectuate a commercial large scale environmental release of Licensed Products within the Territory or any country or region within the Territory according to the strategy agreed upon within the Program Committee. For purposes of this Agreement, "Regulatory Approval" relates only to transgenic aspects of the Licensed Products or other characteristics attributable to the Arcadia Licensed Intellectual Property, and not to other aspects of the Licensed Products for which regulatory agency or other governmental approval must be obtained prior to commercialization in a particular country or region.

1.26 "Regulatory Submission" means a submission of a regulatory package, referring to one Event, to a regulatory authority whose purpose is to allow for the commercial production, culture or importation for food, feed, and industrial use in the jurisdiction governed by such regulatory authority. All regulatory submissions will be made by Mahyco.

1.27 "Safety Package" shall mean reports, studies, data, and/or protocols relating to and/or concerning safety evaluation required by the regulatory authorities relating to a Licensed Product being developed, as listed in Exhibit C and as may be supplemented and/or amended by various government agencies from time to time, on characteristics of proteins produced by Genes expressing one or more Arcadia Traits and contained in Licensed Products, which reports, studies, data, and/or protocols have been found acceptable to one or more governmental entities for purposes of meeting requirements of Regulatory Approval of Licensed Products containing the Arcadia Trait(s).

1.28 "Sublicensee" means a party to whom Mahyco or a Mahyco Affiliate grants a sublicense under this Agreement.

1.29 "Territory" means India, Bangladesh, Pakistan and Sri Lanka.

1.30 "Trait" means any biochemical, physiological, or physical attribute or phenotype of a cell, plant, or other organism, which trait is caused or regulated by one or more Genes, and which trait is expressed in plants.

1.31 "Work Plan" has the meaning set forth in Exhibit B, which Exhibit B shall be developed and approved by the Program Committee as soon as practicable after the Effective Date, and immediately thereafter incorporated into this Agreement.

2. GRANT OF LICENSES.

2.1 Research & Commercial License to Mahyco. Subject to the research rights reserved by Arcadia under Section 2.4 and Mahyco's obligations under this Agreement, Arcadia grants to Mahyco and its Affiliates, and Mahyco accepts for itself and on behalf of its Affiliates, an exclusive, sublicensable license under Arcadia's rights and interest in the Arcadia Licensed Intellectual Property to research, develop, make, have made, use, have used, import, export, distribute, sell, have sold, offer for sale, and otherwise commercially exploit Licensed Products in the Field of Use within the Territory (the "Exclusive Mahyco License").

2.2 Research & Commercial License to Arcadia. Mahyco agrees to grant to Arcadia an exclusive license under Mahyco's interest in any Program IP to research, develop, make, have made, use, have used, sell, have sold, offer for sale, and otherwise commercially exploit, outside the Territory (unless otherwise expressly provided for in writing), biological materials, products, and/or processes that incorporate, contain, utilize, are enabled by, or otherwise exploit Mahyco's interest in any Program IP. Such license shall be subject to mutually acceptable commercial terms and conditions reflective of the then-prevailing industry norms, which terms and conditions shall be negotiated and memorialized prior to commercialization of applicable products.

2.3 Sublicenses. Mahyco and its Affiliates are entitled to grant sublicenses under the license granted in Section 2.1, above. Each sublicense granted by Mahyco or a Mahyco Affiliate shall be consistent with and no less favorable to Arcadia than the terms and conditions of this Agreement, including, but not limited to, those terms relating to Commercial Value Sharing, which will be paid to Arcadia at a rate not less than that to which Mahyco is obligated. For any sublicense granted hereunder, Mahyco shall notify Arcadia of the identity of such Sublicensee and confirm that the key provisions of such sublicenses conform at least to the terms of this Agreement within sixty (60) days of the grant of such sublicense.

2.4 Reservation of Rights to Arcadia. Arcadia reserves and retains title to, ownership of, and control over any and all of its rights not expressly granted to Mahyco or Mahyco's Affiliates in this Agreement. Without limiting the generality of the foregoing, Arcadia reserves, and Mahyco agrees to such reservation of, the non-sublicensable right under Arcadia's interest in the Arcadia Licensed Intellectual Property to research, develop, make, or use (but not to sell, have sold, offer for sale, or otherwise commercially exploit) Licensed Products within the Territory.

2.5 Commercialization of Products. Consequent to the grant of the commercial license of Section 2.1, Mahyco shall not be required to seek approval or permission from Arcadia prior to commercialization of Licensed Products and such commercialization shall only be subject to regulatory compliance within the relevant country or region within the Territory.

2.6 Trait Stacking. Mahyco shall have the right to stack Traits, including Trait(s) sourced from Mahyco and third parties, in combination with Arcadia Trait(s).

3. TRANSFER AND USE OF MATERIALS.

3.1 Transfer of Materials. Subject to mutual agreement by the Parties, Arcadia shall supply to Mahyco a quantity of Materials necessary for Mahyco to perform certain of its obligations under the Program, which obligations shall be defined in the Work Plan.

3.2 Conditions of Use. Mahyco agrees that its use of the Materials shall be subject to the Materials Transfer Agreement between the Parties dated April 15, 2007.

4. RESEARCH AND DILIGENCE OBLIGATIONS.

4.1 Arcadia Diligence Obligations. Arcadia will use commercially reasonable efforts to diligently pursue the objectives set forth in the Program. Arcadia will supply to Mahyco any materials and/or data in the possession of Arcadia, and not otherwise available to Mahyco, that may be necessary or useful under the Program so as to allow Mahyco to timely implement and perform its obligations under the Program.

4.1.1 If Mahyco believes that Arcadia has failed to meet any of the Arcadia diligence obligations set forth above and such failure impacts Mahyco diligence obligations, Mahyco shall provide written notice to Arcadia of the same within a reasonable time. Arcadia shall have one hundred twenty (120) days from the date of such written notice (the "Cure Period") to satisfy the applicable diligence obligations. If, upon expiration of the Cure Period the applicable Arcadia diligence obligations have not been met, Mahyco may provide written notice to Arcadia and the Program Committee shall adjust the Mahyco diligence obligations to accommodate Mahyco for Arcadia's delay in meeting its diligence obligations.

4.2 Mahyco Diligence Obligations. Mahyco will use commercially reasonable efforts to diligently pursue the objectives set forth in the Program, which will be developed and regularly reviewed by the Program Committee. In the event that Mahyco does not satisfy its diligence obligations under the Work Plan, Mahyco shall be subject to reduction and/or loss of license rights, as follows:

4.2.1 If Arcadia believes that Mahyco has failed to meet any Milestone set forth in the Work Plan by the date set forth therein, and subject to Section 5.3.3, Arcadia shall provide written notice to Mahyco of the same within a reasonable time. Mahyco shall have one hundred twenty (120) days from the date of such written notice or such other period of time agreed upon by the Program Committee if the stated milestone cannot reasonably be completed within one hundred twenty (120) days (the "Cure Period") to complete the stated Milestone. If, upon expiration of the Cure Period, (i) in the case of a Milestone without an associated Milestone Fee payment, the stated milestone has not been completed, or (ii) in the case of a milestone that triggers a Milestone Fee payment, the Milestone Fee payment has not been made, Arcadia may provide written notice to Mahyco that the Exclusive Mahyco License has been converted to a non-exclusive license ("Non-Exclusive Mahyco License"), effective as of the date of expiration of the Cure Period. For purposes of clarity and without limitation, for any Milestone the completion of which would trigger a Milestone Fee payment, Mahyco may, at its option, pay the associated Milestone Fee notwithstanding the fact that the Milestone has not been completed, and such payment shall be deemed to satisfy Mahyco's obligations with respect to that particular Milestone, and the Exclusive Mahyco License will not be converted to a non-exclusive license.

4.2.2 Unless earlier terminated in accordance with other provisions of this Agreement, the Non-Exclusive Mahyco License will remain in effect for one (1) year from the date of conversion under Section 4.2.1 herein. If at the end of such one (1) year period, Mahyco has satisfied its obligations under the Work Plan (allowing for any revisions that may have been made in the interim by the Program Committee), then the Non-Exclusive Mahyco License shall continue in effect.

4.2.3 If at the end of such one (1) year period, Mahyco has not satisfied its obligations under the Work Plan (allowing for any revisions that may have been made in the interim by the Program Committee), then Arcadia may, at its sole discretion, exercise its rights under Section 13 and terminate the Agreement for breach.

4.3 Research Milestones. Progress of the Program will be evaluated based on achievement of key milestones ("Milestones"), which are set forth in the Work Plan (Exhibit B). Mahyco shall use its best efforts, consistent with sound and reasonable business practices and judgment, to effect commercialization of Licensed Products as soon as practicable. However, the Milestones may be amended by mutual consent of both Parties, in the event of delays that are beyond the control of Mahyco, including delays for regulatory reasons.

5. PROGRAM MANAGEMENT.

5.1 Program Committee. The Program will be managed by the Program Committee consisting of two (2) representatives from each party, an Executive Sponsor and a Program Manager. The Program Committee will coordinate and expedite the design, development, and implementation of activities that fulfill the purposes of the Program. Each Party may, in its sole discretion, replace the assigned individuals at any time as necessary, by providing written notice to the other Party of such change.

5.2 Executive Sponsors. The initial Executive Sponsors shall be **[…*…]** of Arcadia and **[…*…]** of Mahyco. The Executive Sponsors shall have the following specific responsibilities:

5.2.1 approving the Work Plan and any amendments or changes thereto;

5.2.2 settling disputes or disagreements that cannot be resolved by the Program Managers; and

5.2.3 performing such other functions as appropriate to further the purposes of the Program as agreed by the Parties.

5.3 Program Managers. The initial Program Managers shall be **[…*…]** of Arcadia and **[…*…]** of Mahyco. The Program Managers shall have general responsibility for preparation of the Work Plan and the design, development, and implementation of activities that will fulfill the objectives of the Program as expeditiously as practicable. The Program Managers shall also have the following specific responsibilities:

5.3.1 updating and revising the Work Plan quarterly or as otherwise agreed;

5.3.2 monitoring and reviewing the progress of research and development in order to ensure that satisfactory progress is being made with respect to the execution of the Program;

5.3.3 discussing and agreeing upon remedial measures if a Program Manager determines that the progress in respect of implementation of a Program activity is unsatisfactory;

5.3.4 settling disputes or disagreements related to the Program; and

5.3.5 performing such other functions as appropriate to further the purposes of the Program as agreed by the Parties.

5.4 Decision-Making. Decisions of the Program Managers shall be made by unanimous vote, with each Party having one (1) vote.

5.4.1 If the Program Managers disagree on an issue, the issue shall be presented to the Executive Sponsors for resolution.

5.4.2 If the Executive Sponsors are unable to resolve the issue, the Dispute Resolution provisions of Section 14 shall govern.

5.4.3 Except for modifications to the Work Plan, the Program Committee may not modify this Agreement. Any decisions related to material changes in the scope of the Program or related to changing the terms of this Agreement shall require mutual consent of Mahyco and Arcadia.

5.5 Meetings. The Program Committee shall meet no less frequently than quarterly and such meetings may occur by telephone or in-person, as may be appropriate and agreed upon by the Program Committee. Responsibility for keeping the minutes of these meetings shall alternate between the Parties. The Program Committee will prepare quarterly progress reports and the minutes of the meetings will be approved by both Parties.

5.6 Reporting Requirements. In addition to the quarterly reports prepared by the Program Committee in accordance with Section 5.5, each Party shall deliver status reports to the other Party: (i) upon achievement of any of the Milestones; and (ii) annually by January 31 of the following year.

6. PAYMENTS.

6.1 Technology Access Fee. Arcadia shall receive from Mahyco a Technology Access Fee of **[…*…]** upon signature of the Agreement. Arcadia hereby acknowledges, however, Mahyco's payment of **[…*…]** for the Technology Access Fee under the Collaborative Research and Development Agreement between the Parties dated December 21, 2007, and as such, no further amounts shall be due to Arcadia under this Section 6.1.

6.2 Milestone Fees. In consideration for the rights granted to Mahyco under this Agreement, Arcadia shall receive from Mahyco the following development milestone fees (each

a "Milestone Fee"). Each Milestone Fee shall be paid only once under this Agreement, within thirty (30) days of achievement of the corresponding milestone by either Mahyco, a Mahyco Affiliate, or a Sublicensee, with the understanding that such thirty (30) day periods shall commence on the date on which the Program Committee confirms that the relevant milestone has been achieved and memorializes the same by including such confirmation in the written minutes of a meeting or in another written document. Achievement of any of the below-stated milestones shall constitute *de facto* achievement of all prior milestones.

6.2.1 Milestone #1: Greenhouse Proof of Concept. **[…*…]** upon Greenhouse Proof of Concept of a Licensed Product in the Field of Use.

6.2.2 Milestone #2: Field Trial Proof of Concept. **[…*…]** upon achievement of the First Successful Field Trial of a Licensed Product in the Field of Use.

6.2.3 Milestone #3: Regulatory Submission for Regulatory Approval. **[…*…]** upon Regulatory Submission for Regulatory Approval of a Licensed Product in the Field of Use.

6.2.4 Milestone #4: Regulatory Approval. **[…*…]** upon Regulatory Approval by the relevant regulatory authority in any country within the Territory to sell a Licensed Product in the Field of Use.

6.2.5 Milestone #5: First Commercial Sale. **[…*…]** upon first commercial sale of a Licensed Product in the Field of Use in any country within the Territory.

6.3 Commercial Value Sharing. Subject to the terms and conditions of this Agreement, Arcadia shall receive from Mahyco a percentage share of the Net Trait Value for Licensed Products sold by Mahyco, a Mahyco Affiliate, or a Sublicensee ("Commercial Value Share") as set forth below:

6.3.1 If Arcadia provides Materials, but no Proof of Concept in a Model Plant, then Mahyco agrees to pay Arcadia **[…*…]** of the Net Trait Value.

6.3.2 If Arcadia provides Materials with Proof of Concept in a Model Plant where the transformation is performed by Mahyco, then Mahyco agrees to pay Arcadia **[…*…]** of the Net Trait Value.

6.3.3 If Arcadia provides Materials and Safety Documentation on the Materials, where the transformation is performed by Mahyco in the Field of Use, then Mahyco agrees to pay Arcadia **[…*…]** of the Net Trait Value.

6.3.4 If Arcadia provides Materials, Proof of Concept and Safety Package in a Model Plant, where the transformation is performed by Mahyco in the Field of Use, then Mahyco agrees to pay Arcadia **[…*…]** of the Net Trait Value.

6.3.5 If Arcadia provides Transgenic Seeds carrying an Identified Proven Event, for an Arcadia Trait in the Field of Use, then Mahyco agrees to pay Arcadia **[…*…]** of the Net Trait Value.

6.3.6 If Arcadia provides a Deregulated Transgenic Event, in any country within the Territory, in the Field of Use, then Mahyco agrees to pay Arcadia **[…*…]** of the Net Trait Value.

6.4 Partial Credit for Fees Paid. Mahyco agrees to pay to Arcadia the Technology Access Fee and Milestone Fees in addition to the Commercial Value Share set forth above. Notwithstanding the foregoing, fifty percent (50%) of the total Technology Access Fee and Milestone Fees shall be deductible from the Commercial Value Share due to Arcadia. Such deduction shall occur as a credit against Mahyco's Commercial Value Share payments to Arcadia over a ten (10) year period beginning in year three (3) after the first commercial sale of the applicable Licensed Product in any country in the Territory. The credit in any particular year may not exceed fifty percent (50%) of the total fees due for that year. No credits will be granted after expiration of the above-referenced ten (10) year period.

7. PAYMENTS; BOOKS AND RECORDS.

7.1 Commercial Value Share Reports and Payments. After the first commercial sale of a Licensed Product, Mahyco shall deliver written reports to Arcadia semi-annually, on or before February 15th for the six (6) month period ending the last day of the previous month of December and on or before August 15th for the six (6) month period ending the last day of the previous month of June, stating in each such report, separately for Mahyco and each of its Affiliates and Sublicensees, the quantity and description of all applicable Licensed Products sold, the countries or regions in the Territory in which such Licensed Products were sold, the total Net Trait Value with respect thereto, and the calculation of payments due thereon. Concurrent with the delivery of each semi-annual report, Mahyco shall tender payment of applicable Commercial Value Share accruing during the prior six (6) month period.

7.2 Payment Method. All payments due under this Agreement shall be made by check or by bank Electronic Funds Transfer (EFT) to a bank account designated by the Party receiving such payment. All payments hereunder shall be remitted in U.S. dollars. If any currency conversion shall be required in connection with the remittance of payments hereunder, such conversion shall be made using the exchange rate on the day of remittance. Currency exchange fees and other transaction costs shall be borne by the sending Party. Any withholding amounts required by the country or jurisdiction from which payment is initiated shall be borne by the Party receiving such payment. If the due date for any payment is a Saturday, Sunday or national holiday, such payment may be paid on the following business day.

7.3 Late Payment Penalties. No payment required to be made shall be considered late until thirty (30) days after the date due. Interest shall accrue on any late payment owed to the Party receiving such payment hereunder not made within thirty (30) days of the date such payment is due, at an annual interest rate equal to the average of interbank offered rates for six month U.S. dollar-denominated deposits in the London market ("LIBOR"), as published in The Wall Street Journal at the time of default, plus 200 basis points, with such interest accruing from the date thirty-one (31) days after the payment was originally due, and any late payment pursuant

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

to this Section shall be credited first to interest and then to any outstanding fees. Penal interest shall be subject to any applicable Indian law on remittance of penal interest.

7.4 Delayed Permissions; Escrow. The Parties acknowledge that any remittance of foreign exchange requires certain government approvals. In the event that Mahyco has initiated requisite procedure for the remittance of foreign exchange and in the event that such permission is delayed beyond the thirty (30) day grace period of Section 7.3, above, the amount shall be deposited into an escrow account within said grace period, and in the event of such deposit, the interest payment of Section 7.3 above shall not apply. Such account shall be an interest-bearing account requiring the signature of both Parties for operation. However, in the event remittance of foreign exchange is delayed beyond ninety (90) days of the deposit into escrow, interest on the late payment shall apply from day ninety-one (91) of deposit of payment into escrow. Mahyco shall make its best efforts to obtain the required permission for timely remittance of foreign exchange; however, in the event that such permission is not received, or is delayed beyond one-hundred twenty (120) days from the original payment due date due to circumstances beyond Mahyco's control, the Parties shall meet and discuss an appropriate course of action.

7.5 Records; Inspection. Mahyco shall use commercially reasonable efforts to keep complete, true and accurate books of account and records for the purpose of determining the Commercial Value Share and fees payable under this Agreement. Mahyco acknowledges and agrees that it must keep complete, true and accurate records of details on the calculation of Net Trait Value, including, but not limited to, details on the gross trait revenues for the Licensed Products sold, specific deductions from the revenues utilized to calculate the Net Trait Value. Such books and records shall be kept at Mahyco's principal place of business for at least two (2) years following the end of the year of payment to which they pertain. These books and records shall be open for inspection by Arcadia during such two (2) year period by Arcadia or its designated representative solely for the purpose of verifying payments hereunder. Such inspections may be made at reasonable times and upon reasonable notice to Mahyco. Inspections conducted under this Section 7.5 shall be at Arcadia's expense and may not be conducted on a contingent fee basis; *provided*, *however*, that if a variation or error producing an increase exceeding ten percent (10%) of the amount stated for any period covered by the inspection is established in the course of any such inspection, then all reasonable third party inspector's costs relating to the inspection for such period incurred by Arcadia, and any unpaid amounts that are discovered, including applicable interest thereon, shall be paid within thirty (30) days of receipt of the inspection report by Mahyco.

8. INTELLECTUAL PROPERTY.

8.1 Ownership.

8.1.1 Arcadia shall retain ownership of the Arcadia Licensed Intellectual Property and shall maintain responsibility for prosecuting, maintaining, and enforcing all patent applications and issued patents relating to the Arcadia Licensed Intellectual Property.

8.1.2 Mahyco shall retain ownership of all Mahyco Intellectual Property relating to the Mahyco Technology and shall maintain responsibility for prosecuting, maintaining, and enforcing all patent applications and issued patents within the Mahyco Intellectual Property.

8.1.3 The Parties agree to provide annual updates to each other concerning the progress of Intellectual Property protection, maintenance or enforcement actions or any material office or enforcement action that may affect the Program.

8.2 Program IP. For Program IP, the Parties agree that ownership will be determined in accordance with inventorship. Inventorship of Program IP will be determined in accordance with applicable laws and, if multiple inventors from both Parties collaborate in the development of any aspect of Program IP, such Program IP will be co-owned by the Parties. All personnel involved in the Program shall be contractually required to assign their ownership interest in any Program IP to the Party engaging their services. The Program Committee will advise the Parties on issues relating to protection and enforcement of Program IP.

8.3 Patent Rights.

8.3.1 Arcadia Representation. Arcadia warrants that as of the Effective Date, to the best of its knowledge and belief and with respect to the Arcadia Licensed Intellectual Property, no third party rights exist and no disputes are pending or threatened that could limit the rights granted to Mahyco under this Agreement.

8.3.2 Mahyco Representation. Mahyco warrants that as of the Effective Date, to the best of its knowledge and belief and with respect to any Intellectual Property required to fulfill its obligations under the Program, no other third party rights exist and no disputes are pending or threatened that could limit the ability of Mahyco to fulfill its obligations under this Agreement.

8.3.3 Prosecution and Maintenance. Arcadia shall control and be solely responsible for all costs related to the prosecution and maintenance of the Arcadia Patent Rights. Without limiting the generality of the foregoing, Arcadia shall notify Mahyco no less than thirty (30) days (or as early as possible, if less than thirty (30) days) in advance of taking any action, or of any date in respect of which the decision by Arcadia not to take action, that would materially prejudice Mahyco's rights under this Agreement, including any action or inaction that would result in the invalidation of any aspect of the Arcadia Patent Rights licensed exclusively hereunder. If Arcadia decides not to advance prosecution or maintenance of any aspect of the Arcadia Patent Rights, but Mahyco disagrees with such decision, Arcadia and Mahyco shall meet to discuss an appropriate course of action with respect to the affected Arcadia Patent Rights.

8.3.4 Defense and Enforcement. If either Party becomes aware of any infringement of the Arcadia Patent Rights or assertion thereof, or of any assertion that the use of the Arcadia Licensed Intellectual Property infringes or violates the Intellectual Property rights of any other party (collectively, a "Defense or Enforcement Matter"), it shall promptly notify the other Party. Arcadia shall notify Mahyco as early as possible, and no less than fifteen (15) days in advance of taking any action that would affect Mahyco's rights under this Agreement, and may meet and confer with Mahyco regarding the appropriate action to be taken in respect thereof. Arcadia shall control and be responsible for all decisions and costs related to any Defense or Enforcement Matter, considering Mahyco's reasonable business interests, and shall also own any damages obtained therefrom. Mahyco agrees to assist and cooperate with Arcadia as may be reasonably required in order to perfect Arcadia's interests hereunder and to Arcadia's enforcement and defense of the Arcadia Patent Rights. Mahyco acknowledges that it may be a

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

necessary party to any action brought by or against Arcadia arising from enforcement or defense of the Arcadia Patent Rights, and that the assistance and cooperation agreed to under this provision may require its participation in such proceedings.

8.3.5 Notwithstanding the above, if the action with respect to enforcement or defense of the Arcadia Licensed Intellectual Property as referred to in Section 8.3.4 also concerns Intellectual Property or Licensed Products of Mahyco, then the Parties shall enter discussions in order to arrive at a mutually acceptable approach, which will include an allocation of costs and benefits/damages between the Parties.

8.3.6 In the event that use of the Arcadia Licensed Intellectual Property under this Agreement is found to infringe any third party rights and thus block Mahyco's right to use the Arcadia Licensed Intellectual Property pursuant to the licenses granted hereunder, Arcadia will use commercially reasonable efforts to secure from such third party whatever rights necessary for Mahyco to continue use of the Arcadia Licensed Intellectual Property pursuant to this Agreement. If Arcadia is unsuccessful in securing such rights from the third party, then Mahyco may independently approach such third party to attempt to secure such rights, provided that (i) Mahyco first confers with Arcadia on the matter, and (ii) Mahyco may not take any action or accept any agreement terms that result in a declaration or stipulation of invalidity of any aspect of the Arcadia Licensed Intellectual Property or any diminishment of Arcadia's Intellectual Property rights or rights under this Agreement without the express prior written consent of Arcadia. Arcadia agrees that those fees and costs actually and necessarily incurred by Mahyco in securing such a license from a third party (including, for example, reasonable attorneys' fees, license fees, royalty fees, and the like) shall be deductible as costs when the Net Trait Value for the affected Licensed Product(s) is calculated.

8.3.7 In the event that Mahyco's use of any Intellectual Property (other than the Arcadia Licensed Intellectual Property) in connection with its performance of its obligations under the Program and commercialization of Licensed Products is found to infringe any third party rights and thus hinder Mahyco's ability to fulfill its obligations under this Agreement, Mahyco will use commercially reasonable efforts to secure from such third party whatever rights necessary for Mahyco to continue use of such Intellectual Property. If Mahyco is unsuccessful securing such rights from the third party, then Arcadia may independently approach such third party to attempt to secure such rights on Mahyco's behalf, provided that (i) Arcadia first confers with Mahyco on the matter, and (ii) Arcadia may not take any action or accept any agreement terms that result in a declaration or stipulation of invalidity of any aspect of Mahyco's Intellectual Property or any diminishment of Mahyco's Intellectual Property rights or rights under this Agreement without the express prior written consent of Mahyco. Mahyco agrees to reimburse Arcadia for those fees and costs actually and necessarily incurred by Arcadia in securing such a license from a third party (including, for example, reasonable attorneys' fees, license fees, royalty fees, and the like).

9. REGULATORY CONSIDERATIONS.

9.1 Regulatory Approval. Mahyco shall be responsible for timely preparing all necessary Regulatory Submissions and obtaining all necessary Regulatory Approvals to

manufacture and commercialize Licensed Products within the Territory according to the strategy agreed upon by the Program Committee.

9.2 Regulatory Data. Arcadia agrees to make available to Mahyco regulatory data that it possesses and/or has access to via licensees in other crops in support of obtaining such Regulatory Approvals, to the extent possible, and with the understanding that Mahyco will be responsible for its appropriate share of any external costs for the same borne by Arcadia, which will be agreed to in advance by the Parties, in accessing such data for seeking Regulatory Approval in the Territory and for export market approvals from third parties. Regulatory data shall include any data regarding the use of the Gene(s) regulating Arcadia Trait(s) in the Field of Use, and generated by Arcadia or its Affiliates, technology partners, or other licensees prior to and/or during the Term hereof.

9.3 Regulatory Management, Regulatory Field Trials and Regulatory Studies. Any and all costs attributable to the Regulatory Approval of the Licensed Products, including third party costs incurred in connection with obtaining Regulatory Approvals for Licensed Products, shall be borne by Mahyco. Regulatory field trials will be carried out by Mahyco according to a regulatory plan to be developed by the Program Committee in accordance with government guidelines and/or regulations as applicable in the Territory and subject to relevant government approvals.

9.4 Restrictions on Protein Studies. Unless Mahyco is otherwise directed by regulatory authorities for Regulatory Approval purposes in the Territory, and in the event that such data acceptable for Regulatory Approval purposes is not already available to Arcadia, Mahyco agrees not to engage in any purified protein safety studies (including mouse gavage, in vitro digestive fate, heat stability, and protein allergenicity assessments) relating to Licensed Products without the prior agreement of the Program Committee. Further, unless it is otherwise directed by regulatory authorities for Regulatory Approval purposes in the Territory, and in the event that such data acceptable for Regulatory Approval purposes is not already available to Arcadia, Mahyco agrees not to generate preliminary protein in vitro digestive fate data and/or other data relating to early food safety evaluation without the prior agreement of the Program Committee. In each case, any and all protein studies shall be conducted strictly in accordance with protocols provided in writing by the Program Committee in accordance with government guidelines and/or regulations as applicable in the Territory, and subject to relevant government approvals. In the event that the Program Committee declines to grant permission or fails to provide the protocols for such studies and Mahyco is unable, as a result, to timely achieve a Milestone, Mahyco shall not be penalized for failing to timely meet such Milestone.

9.5 Licensed Product Stewardship and Monitoring. The Parties agree that there may be product stewardship and monitoring requirements associated with obtaining a Regulatory Approval, and/or as a consequence of having received a Regulatory Approval. The Parties agree that such product stewardship and/or monitoring requirements may vary from country to country, and over the course of time within any particular country. The Program Committee will review such product stewardship and/or monitoring requirements.

9.6 Strict Conformance. Each Party agrees to carry out its activities under the Program in strict conformance to all relevant regulations relating to agricultural seed and

products, specifically including all regulations relating to genetically modified organisms. Mahyco shall ensure that Licensed Products comply in all respects with all applicable laws, regulations, directives, instructions, directions or rules of any competent authority in the Territory.

9.7 Regulatory Costs. Except as otherwise set forth herein, any regulatory costs associated with the Program and commercial products resulting from the Program in the Territory, or required because of possible exports from the Territory, will be the responsibility of Mahyco.

10. PUBLICATIONS AND DISCLOSURES.

10.1 Information Exchange. The Parties agree that the purposes of the Program will be best served by an open and thorough exchange of information relevant to the Program. Therefore, the Parties shall not withhold from one another information relevant to the Program, except to the extent disclosure of such information is precluded by other intellectual property agreements and/or obligations of confidentiality.

10.2 Publications. Any publications relating to results of the Program shall be determined and approved by the Program Committee. The Parties will have the right to publish research results from the Program, subject to Program Committee reviewing for intellectual property disclosure issues. The Program Committee will have sixty (60) days to review any request for publication or disclosure. Any request for publication or disclosure shall require unanimous approval by the Program Committee.

10.3 Other Disclosures. Other disclosures relating to the Program are subject to mutual approval of the Parties, such approval not to be unreasonably withheld.

11. WARRANTIES; LIMITATION OF LIABILITY; INDEMNIFICATION.

11.1 NO WARRANTY. UNLESS OTHERWISE EXPRESSLY PROVIDED HEREIN, ANY AND ALL INFORMATION OR MATERIALS PROVIDED UNDER THIS AGREEMENT ARE PROVIDED “AS IS” AND NO WARRANTIES, EXPRESS OR IMPLIED, ARE MADE BY ANY PARTY UNDER THIS AGREEMENT, INCLUDING, WITHOUT LIMITATION, THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR PURPOSE.

11.2 LIMITATION OF LIABILITY. IN NO EVENT, EXCEPT IN THE CASE OF WILLFUL MISCONDUCT, SHALL EITHER PARTY BE LIABLE IN CONTRACT, TORT, OR OTHERWISE TO THE OTHER, OR ANY THIRD PARTY FOR SPECIAL, INCIDENTAL, INDIRECT OR CONSEQUENTIAL DAMAGES, INCLUDING, WITHOUT LIMITATION, LOSS OF USE, LOSS OF DATA OR LOSS OF PROFITS OR REVENUE ARISING FROM ANY CAUSE WHATSOEVER, REGARDLESS OF WHETHER IT SHALL BE ADVISED, SHALL HAVE OTHER REASON TO KNOW, OR IN FACT SHALL KNOW OF THE POSSIBILITY.

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

11.3 Indemnification.

11.3.1 Indemnification by Mahyco. Except to the extent caused by (i) a breach of this Agreement by Arcadia; (ii) a finding of strict liability against Arcadia due to Arcadia's licensing of the Arcadia Licensed Intellectual Property (provided such claims do not arise from Mahyco's or its Affiliates' or Sublicensees' manufacture, use, distribution or sale of Licensed Products); or (iii) Arcadia's negligence, breach of contract with or warranties to third parties, or willful misconduct, Mahyco shall defend and indemnify against, and hold Arcadia and its employees, directors, officers, agents and Affiliates harmless from, any loss, cost, liability or expense (including court costs and reasonable fees of attorneys and other professionals) incurred from any claim arising out of the manufacture, use, distribution, or sale of any Licensed Products by Mahyco or any Affiliate or Sublicensee of Mahyco; *provided, however,* that Arcadia shall provide notice promptly to Mahyco of any actual or threatened claim of which Arcadia becomes aware and for which it seeks indemnification pursuant to this Section 11.3.1.

11.3.2 Indemnification by Arcadia. Except to the extent caused by (i) a breach of this Agreement by Mahyco; (ii) a finding of strict liability against Mahyco due to Mahyco's and/or its Affiliates' and/or Sublicensees' manufacture, use, distribution or sale of Licensed Products; or (iii) Mahyco's negligence, breach of contract with or warranties to third parties, or willful misconduct, Arcadia shall defend and indemnify against, and hold Mahyco and its employees, directors, officers, agents and Affiliates harmless from, any loss, cost, liability or expense (including court costs and reasonable fees of attorneys and other professionals) incurred from any claim in as far as it concerns the Arcadia Licensed Intellectual Property as provided to Mahyco by Arcadia; *provided, however,* that Mahyco shall provide notice promptly to Arcadia of any actual or threatened claim of which Mahyco becomes aware for which it seeks indemnification pursuant to this Section 11.3.2.

12. CONFIDENTIALITY.

12.1 Confidential Information. Except as expressly provided in this Agreement, the Parties agree that, for the Term and for the longer of five (5) years thereafter or as long as trade secret law shall allow, the receiving Party shall keep completely confidential and shall not publish or otherwise disclose and shall not use for any purpose except for the purposes contemplated by this Agreement any Confidential Information furnished to it by or otherwise obtained from the disclosing Party hereto pursuant to this Agreement. Without limiting any provision of this Agreement, each of the Parties hereto shall be responsible for the observance by its employees of the confidentiality obligations set forth in this Agreement.

12.2 Permitted Disclosures. Except as otherwise limited by this Agreement, each Party hereto may disclose the other Party's Confidential Information and scientific data resulting from the activities conducted under this Agreement only (a) to its Affiliates, or to its advisors, financial investors, including prospective financial investors, and the agents or advisors of the foregoing and other similarly situated third parties on a need-to-know basis, if such Affiliates and other permitted recipients agree to be bound by the terms of this Section 12 or have a fiduciary duty of confidentiality, and (b) to the extent such disclosure is reasonably necessary in connection with filing or prosecuting patent applications, prosecuting or defending litigation, complying with applicable governmental regulations, submitting information to tax or other

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

governmental authorities, making a permitted sublicense or otherwise exercising its rights hereunder, provided that if a Party is required to make any such disclosure of another Party's Confidential Information, other than pursuant to a confidentiality agreement, it shall give reasonable advance notice to the latter Party of such disclosure and shall cooperate with the original disclosing Party in any effort by the original disclosing Party to secure a protective order blocking the disclosure of, or otherwise affording confidential treatment to, such Confidential Information. The terms of this Agreement are deemed to be Confidential Information and shall be governed as such, except to the extent necessary to comply with any law or government regulation.

13. TERM AND TERMINATION.

13.1 Term. The term of this Agreement shall commence on the Effective Date and, unless earlier terminated as provided for herein, shall terminate on a country-by-country basis, according to a term measured from the date of first commercial sale of a Licensed Product in such country until the end of the commercial life of all Licensed Products in such country.

13.2 Termination for Breach. Except as otherwise provided in this Agreement, either Party may, upon notice to the other, terminate this Agreement if the other Party materially breaches this Agreement and fails to cure such breach within ninety (90) days after receiving written notice thereof from the non-breaching Party. For the avoidance of doubt, termination of this Agreement shall be effective only if (i) the non-breaching Party provides notice of breach to the other Party, (ii) such breach is not cured within ninety (90) days, and (iii) the non-breaching Party then provides the other Party notice of termination upon expiration of such cure period. The effective date of termination shall be the date of receipt of such notice of termination by the breaching Party.

13.3 Termination for Insolvency. Either Party may terminate this Agreement if, at any time:

13.3.1 The other party makes an assignment for the benefit of creditors or admits in writing its inability generally to pay or is generally not paying its debts as such debts become due;

13.3.2 Any decree or order for relief is entered against the other party under any bankruptcy, reorganization, compromise, arrangement, insolvency, readjustment of debt, dissolution or liquidation or similar law;

13.3.3 The other party petitions or applies to any tribunal for, or consents to, the appointment of, or taking possession by, a trustee, receiver, custodian, liquidator or similar official, of such other party or any substantial part of its assets, or commences a voluntary case under the bankruptcy law of any jurisdiction;

13.3.4 Any such petition or application is filed, or any such proceedings are commenced, against the other party and such other party by any act indicates its approval thereof, consent thereto or acquiescence therein, or an order, judgment or decree is entered appointing any such trustee, receiver, custodian, liquidator or similar official, or approving the

petition in any such proceedings, and such order for relief, order, judgment or decree remains unstayed and in effect for more than sixty (60) days; or

13.3.5 Any order, judgment or decree is entered in any proceedings against the other party decreeing the dissolution of such other party and such order, judgment or decree remains unstayed and in effect for more than sixty (60) days.

13.4 At Will Termination by Mahyco. Mahyco may terminate this Agreement and any obligations imposed and licenses granted hereunder at any time upon ninety (90) days prior notice to Arcadia; *provided, however,* that if such termination is not pursuant to Section 13.2 (Termination for Breach), Mahyco shall, on or before the effective date of such termination (or as promptly as possible within the timeframe set by any applicable government regulations), deliver to Arcadia all current plant lines in the possession of Mahyco or its Affiliates that incorporate Arcadia Licensed Intellectual Property or that were developed using Arcadia Licensed Intellectual Property ("Mahyco Plant Lines"). In the event that Arcadia, in its sole discretion, desires to commercialize Mahyco Plant Lines, and to the extent that Mahyco has the legal right to negotiate a commercialization license with respect to such Mahyco Plant Lines, the Parties agree to negotiate in good faith for a period not to exceed ninety (90) days regarding a royalty-bearing, commercial license for Arcadia to use and commercialize such Mahyco Plant Lines and any associated Mahyco Intellectual Property, and such license, if granted, shall be granted to Arcadia upon mutually acceptable terms and conditions reflective of the then-prevailing industry norms.

13.5 Effect of Termination. On termination or expiration of this Agreement, the following shall occur:

13.5.1 Except as otherwise expressly provided herein, any licenses and sublicenses granted to the Arcadia Licensed Intellectual Property shall immediately terminate;

13.5.2 within thirty (30) days of such termination or expiration, except to the extent necessary for Mahyco and its Affiliates and Sublicensees to exercise their limited rights in accordance with Section 13.5.4, Mahyco and its Affiliates and Sublicensees shall, at Arcadia's option and specific written request, either (i) destroy any and all quantities of biological materials containing Materials or Arcadia Confidential Information and derivatives thereof containing Materials or Arcadia Confidential Information (including, but not limited to, substances that constitute or contain a functional subunit of or product expressed by the biological materials, such as subclones, protein expressed from DNA, RNA or corresponding sequence information, cell lines, plants, seeds, and parts thereof expressing or containing such biological materials, whether provided by Arcadia or generated by Mahyco, its Affiliates, or Sublicensees) in Mahyco's or any Mahyco Affiliate's or Sublicensee's possession or control, and provide Arcadia with written confirmation thereof, or (ii) return to Arcadia any and all quantities of such biological materials and derivatives thereof in Mahyco's or any Mahyco Affiliate's or Sublicensee's possession or control; and

13.5.3 within thirty (30) days of such termination or expiration, Mahyco and its Affiliates and Sublicensees shall, at Arcadia's option and written request, either return or destroy (and provide Arcadia with written confirmation thereof) all data, information, and documentation in Mahyco's or any Mahyco Affiliate's or Sublicensee's possession or control, generated from

use of Arcadia Licensed Intellectual Property by or on behalf of Mahyco or any Mahyco Affiliate or Sublicensee, except that, subject to the confidentiality provisions of Section 12, copies of such data, information and documentation may be retained by Mahyco in as far as required for compliance purposes or for the purposes defined in Section 13.5.4, below.

13.5.4 If either Mahyco or Arcadia terminates this Agreement under Section 13.2, for any reason other than product stewardship, regulatory non-compliance, or other reason that could give rise to increased liability to either Party if Licensed Products continue to be distributed or sold, Mahyco shall, unless prohibited by law, be entitled to sell, for a period of thirty-six (36) months, remaining inventories of any Licensed Products that are already in its possession or in the production cycle. Such sales shall be in accordance with this Agreement and Mahyco shall continue to be obligated to make all applicable payments hereunder. Thereafter, any remaining Licensed Products that are not intended to be sold, and all Materials and Confidential Information relating to or provided by Arcadia, if any, shall be destroyed or shall be returned in accordance with Sections 13.5.2 and 13.5.3, above.

13.5.5 If, as a result of Arcadia's failure to fulfill its diligence obligations or any other material obligations under this Agreement, Mahyco is unable to feasibly advance the Program under this Agreement and is compelled to terminate the affected Program, Arcadia and Mahyco shall meet and agree upon commercially reasonable compensation for Mahyco, such compensation to be derived from an appropriate adjustment to Commercial Value Sharing under other programs.

13.6 Accrued Obligations. Termination of this Agreement or any license hereunder for any reason shall not release any Party from any liability that, at the time of such termination, has already accrued to the other Party.

13.7 Survival. Sections 1, 6.3, 6.4, 9.6, and 9.7 (but only as the same are applied to any surviving clauses, including, but not limited to, Section 13.5.4), 3.2, 7, 8.1, 8.2, 11, 12, 13.5, 13.6, 13.7, 14, and 15 (except 15.8) shall survive the expiration or termination of this Agreement and any applicable license terminated in accordance with the terms hereof.

14. DISPUTE RESOLUTION.

14.1 Arbitration. Any controversies, disputes arising thereunder which cannot be resolved amicably, shall be referred to arbitration conducted in accordance with English arbitration law and the English Arbitration Act of 1996.

14.2 Costs; Payments. Except as otherwise expressly provided herein, the costs of the arbitration, including administrative and arbitrators' fees, shall be shared equally by the Parties and each Party shall bear its own costs, attorneys' fees and witness fees incurred in connection with the arbitration. Any decision that requires a monetary payment shall require such payment to be payable in United States dollars, free of any tax or other deduction.

14.3 Timing. A disputed performance or suspended performances pending the resolution of the arbitration must be completed within a reasonable time period following the final decision of the arbitrators. Any arbitration subject to this Section 14 shall be completed within one (1) year from the filing of notice of a request for such arbitration.

14.4 Confidentiality of Proceedings. The arbitration proceedings and the decision shall not be made public without the joint consent of the Parties and each Party shall maintain the confidentiality of such proceedings and decision unless otherwise permitted by the other Party.

14.5 Binding Decision. The Parties agree that the arbitrators' decision shall be the sole, exclusive and binding remedy between them regarding any and all disputes, controversies, claims and counterclaims presented to the arbitrators. Any award may be entered in a court of competent jurisdiction for a judicial recognition of the decision and an order of enforcement.

14.6 Language. All arbitration proceedings shall be conducted in the English language.

14.7 Venue. In cases where arbitration is initiated by either Arcadia or Mahyco, it shall be held in England unless otherwise agreed by the Parties.

15. MISCELLANEOUS.

15.1 Costs under the Agreement and the Program. Unless otherwise agreed to by the Parties in writing or as expressly provided in this Agreement, each Party will be responsible for the costs of its own activities under the Agreement and relating to the Program, including travel costs for its personnel who are working on the Program.

15.2 Governing Law. This Agreement shall be construed in accordance with, and all disputes hereunder shall be governed by, interpreted and construed in accordance with the laws of the Republic of India.

15.3 Waiver. Neither Party may waive or release any of its rights or interests in this Agreement except in writing. The failure of either Party to assert a right hereunder or to insist upon compliance with any term or condition of this Agreement shall not constitute a waiver of that right or excuse a similar subsequent failure to perform any such term or condition.

15.4 Amendment. This Agreement may be modified or amended only pursuant to a writing executed by both Parties.

15.5 Assignment. The rights and obligations of this Agreement shall not be assigned, conveyed, or transferred, in whole or part (by operation of law or otherwise), by a Party to any third party without the consent of other Party, except that either Party may, without the other Party's consent, assign its rights and obligations to any purchaser of all or substantially all of the assets of such Party related to this Agreement or to any successor corporation resulting from any change of control of such Party.

15.6 Notices. All notices required or permitted hereunder shall be in writing and be served on the parties at the addresses set forth below. Any such notices shall be either (a) sent by a nationally recognized overnight courier, in which case notice shall be deemed delivered when delivery is made according to the records of such courier, (b) sent by facsimile, in which case notice shall be deemed delivered upon receipt of confirmation of transmission of such facsimile notice, or (c) sent by personal delivery, in which case notice shall be deemed delivered upon

receipt. Any notice by facsimile or personal delivery and delivered after 5:00 p.m., Pacific Daylight Time, shall be deemed received on the next business day:

If to Mahyco: Maharashtra Hybrid Seeds Co. Ltd.

Resham Bhavan, 4th Floor
78 Veer Nariman Road

Mumbai - 400020, India
Attn: Mr. Raju Barwale, Managing Director

With a copy to: Mahyco Research Centre
Jalna — Aurangabad Road
P.O. Box. 76
Jalna — 431 203, Maharashtra, India
Attn: IP and Tech Transfer

If to Arcadia: Arcadia Biosciences, Inc.
202 Cousteau Place, Suite 200
Davis, California 95616
Attn: Eric Rey, President & CEO

15.7 Performance Warranty. Mahyco and Arcadia hereby warrant and guarantee the performance of any and all rights and obligations of this Agreement by their respective Affiliates.

15.8 Force Majeure. Neither Party shall be liable to the other for failure or delay in the performance of any of its obligations under this Agreement (other than obligations to pay money) for the time and to the extent such failure or delay is caused by riot, civil commotion, war, terrorist act, hostilities between nations, governmental law, order or regulation enacted after the date hereof, embargo, action by the government or any agency thereof, force of nature, storm, fire, earthquake, accident, labor dispute or strike or lockout or injunction (provided that neither of the Parties shall be required to settle a labor dispute against its own best judgment), sabotage, explosion or other similar or different contingencies/events, in each case, beyond the reasonable control of such Party. The Party affected by Force Majeure shall provide the other Party with full particulars thereof as soon as it becomes aware of the same (including its best estimate of the likely extent and duration of the interference with its activities), and shall use commercially reasonable efforts to overcome the difficulties created thereby and to resume performance of its obligations as soon as practicable.

15.9 Independent Contractors. Nothing contained in this Agreement is intended implicitly, or is to be construed, to constitute Mahyco or Arcadia as partners in the legal sense. Neither Party shall have any express or implied right or authority to assume or create any obligations on behalf of or in the name of the other Party or to bind the other Party to any contract, agreement, or undertaking with any third party.

15.10 Advice of Counsel. Mahyco and Arcadia each have had the opportunity to consult with counsel of their choice regarding this Agreement, and each acknowledges and

agrees that this Agreement shall not be deemed to have been drafted by one Party or another and shall be construed accordingly.

15.11 Compliance with Laws. Each Party agrees to comply with all material state, federal, and local laws, rules, and regulations applicable to the performance of its obligations under this Agreement, including in respect of further research conducted hereunder and the transfer, export, or sale of biological materials.

15.12 Other Obligations. Except as expressly provided in this Agreement or as separately agreed upon in writing between Arcadia and Mahyco, each Party shall bear its own costs incurred in connection with the implementation of the obligations under this Agreement.

15.13 Publicity. Neither Party may make a public notice concerning the subject matter or existence of this Agreement without the prior written consent of the other Party.

15.14 Severability. If any provision or provisions of this Agreement shall be held to be invalid, illegal, or unenforceable, the validity, legality and enforceability of the remaining provisions shall not in any way be affected or impaired thereby.

15.15 Approvals. Mahyco shall be responsible, at its expense (except as otherwise provided in this Agreement), for obtaining any approvals from the governmental entities that may be required under applicable law for the commercial exploitation of Licensed Products by Mahyco.

15.16 Entire Agreement. This Agreement, together with the Exhibits hereto, constitutes the entire agreement between Mahyco and Arcadia with respect to the subject matter hereof, and supersedes all prior or contemporaneous understandings or agreements between the Parties with respect to such subject matter within the Territory, whether written or oral, that are not specifically referenced otherwise herein. For purposes of clarity and without limitation, this Agreement expressly supersedes the Collaborative Research and Development Agreement between the Parties dated December 21, 2007 with respect to all provisions relating to the research, development, and commercialization of Licensed Products in the Field of Use within the Territory.

15.17 Headings. The headings to the Sections hereof are not a part of this Agreement, but are included merely for convenience of reference only and shall not affect the meaning or interpretation of any provision of this Agreement.

15.18 Construction. Whenever examples are used in this Agreement with the words “including,” “for example,” “e.g.,” “such as,” “etc.” or any derivation of such words, such examples are intended to be illustrative and not limiting. Whenever the singular is defined or used throughout this Agreement, the same shall be construed as meaning the plural whenever the context may require.

[SIGNATURE PAGE FOLLOWS]

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

IN WITNESS WHEREOF, the Parties hereto have caused this Agreement to be duly executed by their authorized representatives effective as of the Effective Date.

ARCADIA BIOSCIENCES, INC.	**MAHARASHTRA HYBRID SEEDS CO. LTD.**
By: /s/ Eric J. Rey	By: /s/
Name: Eric J. Rey	Name: […*…]
Title: President & CEO	Title: Joint Director of Research
Date of Execution:	Date of Execution:

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

EXHIBIT A

ARCADIA PATENT RIGHTS

U.S. Patent No. 6,084,153
U.S. Patent No. 7,390,937
U.S. Patent Application No. 10/321,718 (publication number US20050015828A1)
U.S. Patent Application No. 11/644,321 (publication number US20070162995A1)
U.S. Patent Application No. 11/644,453 (publication number US20070157337A1)
Argentina Patent Application No. 60105745
Argentina Patent Application No. 60105746
Australia Patent No. 0727264B2
Australia Patent No. 0760622B2
Australia Patent No. 0782263B2
Australia Patent Application No. 2006330817
Australia Patent Application No. 20066331544
Brazil Patent Application No. PI06203124
Brazil Patent Application No. PI06203159
Brazil Patent Application No. PI 0107900-0
Canada Patent Application No. 2,169,502
Canada Patent No. 2,398,510
Canada Patent Application No. 2,634,925
Canada Patent Application No. 2,633,517
China Patent Application No. 200680048718.1
China Patent Application No. 200680048697.3
European Patent No. 1250445 (Belgium, Germany, Spain, France, Great Britain, Italy, The Netherlands)
European Patent Application No. 68488733
European Patent Application No. 68479500
Great Britain Patent No. 2,325,232
Great Britain Patent No. 2,349,886
India Patent Application No. 2870KOLNP2008
India Patent Application No. 2849KOLNP2008
Mexico Patent Application No. MX/a/2008/008189
Mexico Patent Application No. MX/a/2008/0081930
South Africa Patent Application No. 2008/05007
South Africa Patent Application No. 2008/04960
Thailand Patent Application No. 601006505
Thailand Patent Application No. 601006506
Vietnam Patent Application No. 1200801802
Vietnam Patent Application No. 1200801714

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

EXHIBIT B

WORK PLAN

[TBD and incorporated by the Parties]

EXHIBIT C

SAFETY PACKAGE

[TBD and provided by Arcadia]

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

Exhibit 10.7

ARCADIA BIOSCIENCES, INC.

INDEMNIFICATION AGREEMENT

This Indemnification Agreement (this "Agreement") is made as of _____, 2015, by and between Arcadia Biosciences, Inc., a Delaware corporation (the "Company"), and _____ ("Indemnitee").

RECITALS

The Company and Indemnitee recognize the increasing difficulty in obtaining liability insurance for directors, officers and key employees, the significant increases in the cost of such insurance and the general reductions in the coverage of such insurance. The Company and Indemnitee further recognize the substantial increase in corporate litigation in general, subjecting directors, officers and key employees to expensive litigation risks at the same time as the availability and coverage of liability insurance has been severely limited. Indemnitee does not regard the current protection available as adequate under the present circumstances, and Indemnitee may not be willing to continue to serve in Indemnitee's current capacity with the Company without additional protection. The Company desires to attract and retain the services of highly qualified individuals, such as Indemnitee, and to indemnify its directors, officers and key employees so as to provide them with the maximum protection permitted by law.

AGREEMENT

In consideration of the mutual promises made in this Agreement, and for other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Company and Indemnitee hereby agree as follows:

1. **Indemnification.**

(a) **Third-Party Proceedings.** To the fullest extent permitted by applicable law, the Company shall indemnify Indemnitee, if Indemnitee was, is or is threatened to be made, a party to or a participant (as a witness or otherwise) in any Proceeding (other than a Proceeding by or in the right of the Company to procure a judgment in the Company's favor), against all Expenses, judgments, fines and amounts paid in settlement (if such settlement is approved in advance by the Company, which approval shall not be unreasonably withheld) actually and reasonably incurred by Indemnitee in connection with such Proceeding if Indemnitee acted in good faith and in a manner Indemnitee reasonably believed to be in or not opposed to the best interests of the Company and, in the case of a criminal Proceeding, had no reasonable cause to believe Indemnitee's conduct was unlawful.

(b) **Proceedings By or in the Right of the Company.** To the fullest extent permitted by applicable law, the Company shall indemnify Indemnitee, if Indemnitee was, is or is threatened to be made a party to or a participant (as a witness or otherwise) in any Proceeding by or in the right of the Company to procure a judgment in the Company's favor, against all Expenses actually and reasonably incurred by Indemnitee in connection with such Proceeding if

---

Indemnitee acted in good faith and in a manner Indemnitee reasonably believed to be in or not opposed to the best interests of the Company, except that no indemnification shall be made in respect of any claim, issue or matter as to which Indemnitee shall have been finally adjudicated by court order or judgment to be liable to the Company unless and only to the extent that the Court of Chancery or the court in which such Proceeding is or was pending shall determine upon application that, in view of all the circumstances of the case, Indemnitee is fairly and reasonably entitled to indemnity for such expenses which such court shall deem proper.

(c) **Success on the Merits.** To the fullest extent permitted by applicable law and to the extent that Indemnitee has been successful on the merits or otherwise in defense of any Proceeding referred to in Section 1(a) or Section 1(b) or the defense of any claim, issue or matter therein, in whole or in part, the Company shall indemnify Indemnitee against all Expenses actually and reasonably incurred by Indemnitee in connection therewith. Without limiting the generality of the foregoing, if Indemnitee is successful on the merits or otherwise as to one or more but less than all claims, issues or matters in a Proceeding, the Company shall indemnify Indemnitee against all Expenses actually and reasonably incurred by Indemnitee in connection with such successfully resolved claims, issues or matters to the fullest extent permitted by applicable law. If any Proceeding is disposed of on the merits or otherwise (including a disposition without prejudice), without (i) the disposition being adverse to Indemnitee, (ii) an adjudication that Indemnitee was liable to the Company, (iii) a plea of guilty by Indemnitee, (iv) an adjudication that Indemnitee did not act in good faith and in a manner Indemnitee reasonably believed to be in or not opposed to the best interests of the Company, and (v) with respect to any criminal Proceeding, an adjudication that Indemnitee had reasonable cause to believe Indemnitee's conduct was unlawful, Indemnitee shall be considered for the purposes hereof to have been wholly successful with respect thereto.

(d) **Witness Expenses.** To the fullest extent permitted by applicable law and to the extent that Indemnitee is a witness or otherwise asked to participate in any Proceeding to which Indemnitee is not a party, the Company shall indemnify Indemnitee against all Expenses actually and reasonably incurred by Indemnitee in connection with such Proceeding.

2. **Indemnification Procedure.**

(a) **Advancement of Expenses.** To the fullest extent permitted by applicable law, the Company shall advance all Expenses actually and reasonably incurred by Indemnitee in connection with a Proceeding within thirty (30) days after receipt by the Company of a statement requesting such advances from time to time, whether prior to or after final disposition of any Proceeding. Such advances shall be unsecured and interest free and shall be made without regard to Indemnitee's ability to repay the Expenses and without regard to Indemnitee's ultimate entitlement to indemnification under the other provisions of this Agreement. Indemnitee shall be entitled to continue to receive advancement of Expenses pursuant to this Section 2(a) unless and until the matter of Indemnitee's entitlement to indemnification hereunder has been finally adjudicated by court order or judgment from which no further right of appeal exists. Indemnitee hereby undertakes to repay such amounts advanced only if, and to the extent that, it ultimately is determined that Indemnitee is not entitled to be indemnified by the Company under the other provisions of this Agreement. Indemnitee shall qualify for advances upon the execution and delivery of this Agreement, which shall constitute the requisite undertaking with respect to

repayment of advances made hereunder and no other form of undertaking shall be required to qualify for advances made hereunder other than the execution of this Agreement.

(b) **Notice and Cooperation by Indemnitee.** Indemnitee shall promptly notify the Company in writing upon being served with any summons, citation, subpoena, complaint, indictment, information or other document relating to any Proceeding or matter for which indemnification will or could be sought under this Agreement. Such notice to the Company shall include a description of the nature of, and facts underlying, the Proceeding, shall be directed to the Chief Executive Officer of the Company and shall be given in accordance with the provisions of Section 13(e) below. In addition, Indemnitee shall give the Company such additional information and cooperation as the Company may reasonably request. Indemnitee's failure to so notify, provide information and otherwise cooperate with the Company shall not relieve the Company of any obligation that it may have to Indemnitee under this Agreement, except to the extent that the Company is adversely affected by such failure.

(c) **Determination of Entitlement.**

(i) **Final Disposition.** Notwithstanding any other provision in this Agreement, no determination as to entitlement to indemnification under this Agreement shall be required to be made prior to the final disposition of the Proceeding.

(ii) **Determination and Payment.** Subject to the foregoing, promptly after receipt of a statement requesting payment with respect to the indemnification rights set forth in Section 1, to the extent required by applicable law, the Company shall take the steps necessary to authorize such payment in the manner set forth in Section 145 of the Delaware General Corporation Law. The Company shall pay any claims made under this Agreement, under any statute, or under any provision of the Company's Certificate of Incorporation or Bylaws providing for indemnification or advancement of Expenses, within thirty (30) days after a written request for payment thereof has first been received by the Company, and if such claim is not paid in full within such thirty (30) day-period, Indemnitee may, but need not, at any time thereafter bring an action against the Company in the Delaware Court of Chancery to recover the unpaid amount of the claim and, subject to Section 12, Indemnitee shall also be entitled to be paid for all Expenses actually and reasonably incurred by Indemnitee in connection with bringing such action. It shall be a defense to any such action (other than an action brought to enforce a claim for advancement of Expenses under Section 2(a)) that Indemnitee has not met the standards of conduct which make it permissible under applicable law for the Company to indemnify Indemnitee for the amount claimed. In making a determination with respect to entitlement to indemnification hereunder, the person or persons or entity making such determination shall presume that Indemnitee is entitled to indemnification under this Agreement and the Company shall have the burden of proof to overcome that presumption with clear and convincing evidence to the contrary. The termination of any Proceeding by judgment, order, settlement, conviction, or upon a plea of *nolo contendere* or its equivalent, shall not, of itself, create a presumption that Indemnitee did not act in good faith and in a manner which Indemnitee reasonably believed to be in or not opposed to the best interests of the Company, or, in the case of a criminal Proceeding, that Indemnitee had reasonable cause to believe that Indemnitee's conduct was unlawful. In addition, it is the parties' intention that if the Company contests Indemnitee's right to indemnification, the question of Indemnitee's right to indemnification shall

be for the court to decide, and neither the failure of the Company (including its Board of Directors, any committee or subgroup of the Board of Directors, independent legal counsel, or its stockholders) to have made a determination that indemnification of Indemnitee is proper in the circumstances because Indemnitee has met the applicable standard of conduct required by applicable law, nor an actual determination by the Company (including its Board of Directors, any committee or subgroup of the Board of Directors, independent legal counsel, or its stockholders) that Indemnitee has not met such applicable standard of conduct, shall create a presumption that Indemnitee has or has not met the applicable standard of conduct. If any requested determination with respect to entitlement to indemnification hereunder has not been made within ninety (90) days after the final disposition of the Proceeding, the requisite determination that Indemnitee is entitled to indemnification shall be deemed to have been made.

(iii) **Change of Control.** Notwithstanding any other provision in this Agreement, if a Change of Control has occurred, any person or body appointed by the Board of Directors in accordance with applicable law to review the Company's obligations hereunder and under applicable law shall be Independent Counsel selected by Indemnitee and approved by the Company (which approval shall not be unreasonably withheld). Such counsel, among other things, will render its written opinion to the Company and Indemnitee as to whether and to what extent Indemnitee would be entitled to be indemnified hereunder under applicable law and the Company agrees to abide by such opinion. The Company agrees to pay the reasonable fees of the Independent Counsel referred to above and to indemnify fully such counsel against any and all expenses (including attorneys' fees), claims, liabilities and damages arising out of or relating to this Agreement or its engagement pursuant hereto. Notwithstanding any other provision of this Agreement, the Company shall not be required to pay Expenses of more than one Independent Counsel in connection with all matters concerning a single Indemnitee, and such Independent Counsel shall be the Independent Counsel for any or all other Indemnitees unless (i) the Company otherwise determines or (ii) any Indemnitee shall provide a written statement setting forth in detail a reasonable objection to such Independent Counsel representing other indemnitees under agreements similar to this Agreement.

(d) **Payment Directions.** To the extent payments are required to be made hereunder, the Company shall, in accordance with Indemnitee's request (but without duplication), (i) pay such Expenses on behalf of Indemnitee, (b) advance to Indemnitee funds in an amount sufficient to pay such Expenses, or (c) reimburse Indemnitee for such Expenses.

(e) **Notice to Insurers.** If, at the time of the receipt of a notice of a claim pursuant to Section 2(b) hereof, the Company has director and officer liability insurance in effect, the Company shall give prompt notice of the commencement of such Proceeding to the insurers in accordance with the procedures set forth in the respective policies. The Company shall thereafter take all necessary or desirable action to cause such insurers to pay, on behalf of Indemnitee, all amounts payable as a result of such Proceeding in accordance with the terms of such policies.

(f) **Defense of Claim and Selection of Counsel.** In the event the Company shall be obligated under Section 2(a) hereof to advance Expenses with respect to any Proceeding, the Company, if appropriate, shall be entitled to assume the defense of such Proceeding, with counsel reasonably acceptable to Indemnitee, upon the delivery to Indemnitee of written notice

of its election so to do. After delivery of such notice, approval of such counsel by Indemnitee and the retention of such counsel by the Company, the Company will not be liable to Indemnitee under this Agreement for any fees of counsel subsequently incurred by Indemnitee with respect to the same Proceeding, provided that (i) Indemnitee shall have the right to employ counsel in any such Proceeding at Indemnitee's expense; and (ii) if (A) the employment of counsel by Indemnitee has been previously authorized by the Company, (B) Indemnitee shall have reasonably concluded that there may be a conflict of interest between the

Company and Indemnitee in the conduct of any such defense or (C) the Company shall not, in fact, have employed counsel to assume the defense of such Proceeding, then the fees and expenses of Indemnitee's counsel shall be at the expense of the Company. In addition, if there exists a potential, but not an actual conflict of interest between the Company and Indemnitee, the actual and reasonable legal fees and expenses incurred by Indemnitee for separate counsel retained by Indemnitee to monitor the Proceeding (so that such counsel may assume Indemnitee's defense if the conflict of interest between the Company and Indemnitee becomes an actual conflict of interest) shall be deemed to be Expenses that are subject to indemnification hereunder. The existence of an actual or potential conflict of interest, and whether such conflict may be waived, shall be determined pursuant to the rules of attorney professional conduct and applicable law. The Company shall not be required to obtain the consent of Indemnitee for the settlement of any Proceeding the Company has undertaken to defend if the Company assumes full and sole responsibility for each such settlement; provided, however, that the Company shall be required to obtain Indemnitee's prior written approval, which shall not be unreasonably withheld, before entering into any settlement which (1) does not grant Indemnitee a complete release of liability, (2) would impose any penalty or limitation on Indemnitee, or (3) would admit any liability or misconduct by Indemnitee.

3. **Additional Indemnification Rights.**

(a) **Scope.** Notwithstanding any other provision of this Agreement, the Company hereby agrees to indemnify Indemnitee to the fullest extent permitted by law, notwithstanding that such indemnification is not specifically authorized by the other provisions of this Agreement, the Company's Certificate of Incorporation, the Company's Bylaws or by statute. In the event of any change, after the date of this Agreement, in any applicable law, statute, or rule which expands the right of a Delaware corporation to indemnify a member of its board of directors or an officer, such changes shall be deemed to be within the purview of Indemnitee's rights and the Company's obligations under this Agreement. In the event of any change in any applicable law, statute or rule which narrows the right of a Delaware corporation to indemnify a member of its board of directors or an officer, such changes, to the extent not otherwise required by such law, statute or rule to be applied to this Agreement shall have no effect on this Agreement or the parties' rights and obligations hereunder.

(b) **Nonexclusivity.** The indemnification provided by this Agreement shall not be deemed exclusive of any rights to which Indemnitee may be entitled under the Company's Certificate of Incorporation, its Bylaws, any agreement, insurance coverage, any vote of stockholders or disinterested members of the Company's Board of Directors, the Delaware General Corporation Law, or otherwise, both as to action in Indemnitee's official capacity and as to action in another capacity while holding such office.

(c) **Interest on Unpaid Amounts.** If any payment to be made by the Company to Indemnitee hereunder is delayed by more than ninety (90) days from the date the duly prepared request for such payment is received by the Company, interest shall be paid by the Company to Indemnitee at the legal rate under Delaware law for amounts which the Company indemnifies or is obligated to indemnify for the period commencing with the date on which Indemnitee actually incurs such Expense or pays such judgment, fine or amount in settlement and ending with the date on which such payment is made to Indemnitee by the Company.

(d) **Information Sharing.** If Indemnitee is the subject of or is implicated in any way during an investigation, whether formal or informal, the Company shall share with Indemnitee any information the Company has furnished to any third parties concerning the investigation provided that, at the time such information is so furnished to such third party, Indemnitee continues to serve in one or more capacities giving rise to the Company's indemnification obligations under Section 1.

(e) **Third-Party Indemnification.** The Company hereby acknowledges that Indemnitee has or may from time to time obtain certain rights to indemnification, advancement of expenses and/or insurance provided by one or more third parties (collectively, the "Third-Party Indemnitors"). The Company hereby agrees that it is the indemnitor of first resort (*i.e.*, its obligations to Indemnitee are primary and any obligation of the Third-Party Indemnitors to advance expenses or to provide indemnification for the same expenses or liabilities incurred by Indemnitee are secondary), and that the Company will not assert that the Indemnitee must seek expense advancement or reimbursement, or indemnification, from any Third-Party Indemnitor before the Company must perform its expense advancement and reimbursement, and indemnification obligations, under this Agreement. No advancement or payment by the Third-Party Indemnitors on behalf of Indemnitee with respect to any claim for which Indemnitee has sought indemnification from the Company shall affect the foregoing. The Third-Party Indemnitors shall be subrogated to the extent of such advancement or payment to all of the rights of recovery which Indemnitee would have had against the Company if the Third-Party Indemnitors had not advanced or paid any amount to or on behalf of Indemnitee. If for any reason a court of competent jurisdiction determines that the Third-Party Indemnitors are not entitled to the subrogation rights described in the preceding sentence, the Third-Party Indemnitors shall have a right of contribution by the Company to the Third-Party Indemnitors with respect to any advance or payment by the Third-Party Indemnitors to or on behalf of the Indemnitee.

(f) **Indemnification of Control Person.** If (i) Indemnitee is or was affiliated with one or more of the Company's current or former stockholders that may be deemed to be or to have been a controlling person of the Company (each a "Control Person"), (ii) a Control Person is, or is threatened to be made, a party to or a participant (including as a witness) in any proceeding, and (iii) the Control Person's involvement in the proceeding is related to Indemnitee's service to the Company as a director of the Company, or arises from the Control Person's status or alleged status as a controlling person of the Company resulting from such Control Person's affiliation with Indemnitee, then the Control Person shall be entitled to all of the indemnification rights and remedies under this Agreement to the same extent as Indemnitee.

4. **Partial Indemnification.** If Indemnitee is entitled under any provision of this Agreement to indemnification by the Company for some or a portion of the Expenses, judgments, fines or amounts paid in settlement, actually and reasonably incurred in connection with a Proceeding, but not, however, for the total amount thereof, the Company shall nevertheless indemnify Indemnitee for the portion of such Expenses, judgments, fines and amounts paid in settlement to which Indemnitee is entitled.

5. **Director and Officer Liability Insurance.**

(a) **D&O Policy.** The Company shall, from time to time, make the good faith determination whether or not it is practicable for the Company to obtain and maintain a policy or policies of insurance with reputable insurance companies providing the directors and officers of the Company with coverage for losses from wrongful acts, or to ensure the Company's performance of its indemnification obligations under this Agreement. Among other considerations, the Company will weigh the costs of obtaining such insurance coverage against the protection afforded by such coverage. In all policies of director and officer liability insurance, Indemnitee shall be named as an insured in such a manner as to provide Indemnitee the same rights and benefits as are accorded to the most favorably insured of the Company's directors, if Indemnitee is a director; or of the Company's officers, if Indemnitee is not a director of the Company but

is an officer; or of the Company's key employees, if Indemnitee is not an officer or director but is a key employee. Notwithstanding the foregoing, the Company shall have no obligation to obtain or maintain such insurance if the Company determines in good faith that such insurance is not reasonably available, if the premium costs for such insurance are disproportionate to the amount of coverage provided, if the coverage provided by such insurance is limited by exclusions so as to provide an insufficient benefit, or if Indemnitee is covered by similar insurance maintained by a parent or subsidiary of the Company.

(b) **Tail Coverage.** In the event of a Change of Control or the Company's becoming insolvent (including being placed into receivership or entering the federal bankruptcy process and the like), the Company shall maintain in force any and all insurance policies then maintained by the Company in providing insurance (directors' and officers' liability, fiduciary, employment practices or otherwise) in respect of Indemnitee, for a period of six years thereafter.

6. **Severability.** Nothing in this Agreement is intended to require or shall be construed as requiring the Company to do or fail to do any act in violation of applicable law. The Company's inability, pursuant to court order, to perform its obligations under this Agreement shall not constitute a breach of this Agreement. If this Agreement or any portion hereof shall be invalidated on any ground by any court of competent jurisdiction, then the Company shall nevertheless indemnify Indemnitee to the full extent permitted by any applicable portion of this Agreement that shall not have been invalidated, and the balance of this Agreement not so invalidated shall be enforceable in accordance with its terms.

7. **Exclusions.** Any other provision herein to the contrary notwithstanding, the Company shall not be obligated pursuant to the terms of this Agreement:

(a) **Claims Initiated by Indemnitee.** To indemnify or advance Expenses to Indemnitee with respect to Proceedings initiated or brought voluntarily by Indemnitee and not by

way of defense, except with respect to Proceedings brought to establish, enforce or interpret a right to indemnification under this Agreement or any other statute or law or otherwise as required under Section 145 of the Delaware General Corporation Law, but such indemnification or advancement of Expenses may be provided by the Company in specific cases if the Board of Directors finds it to be appropriate; provided, however, that the exclusion set forth in the first clause of this subsection shall not be deemed to apply to any investigation initiated or brought by Indemnitee to the extent reasonably necessary or advisable in support of Indemnitee's defense of a Proceeding to which Indemnitee was, is or is threatened to be made, a party;

(b) **Lack of Good Faith.** To indemnify Indemnitee for any Expenses incurred by Indemnitee with respect to any Proceeding instituted by Indemnitee to establish, enforce or interpret a right to indemnification under this Agreement or any other statute or law or otherwise as required under Section 145 of the Delaware General Corporation Law, if a court of competent jurisdiction determines that each of the material assertions made by Indemnitee in such proceeding was not made in good faith or was frivolous;

(c) **Insured Claims.** To indemnify Indemnitee for Expenses to the extent such Expenses have been paid directly to Indemnitee by an insurance carrier under an insurance policy maintained by the Company; or

(d) **Certain Exchange Act Claims.** To indemnify Indemnitee in connection with any claim made against Indemnitee for (i) an accounting of profits made from the purchase and sale (or sale and purchase) by Indemnitee of securities of the Company within the meaning of Section 16(b) of the Exchange Act or any similar successor statute or any similar provisions of state statutory law or common law, or (ii) any reimbursement of the Company by Indemnitee of any bonus or other incentive-based or equity-based compensation or of any profits realized by Indemnitee from the sale of securities of the Company, as required in each case under the Exchange Act (including any such reimbursements that arise from an accounting restatement of the Company pursuant to Section 304 of the Sarbanes-Oxley Act of 2002 (the "Sarbanes-Oxley Act") or Section 954 of the Dodd-Frank Wall Street Reform and Consumer Protection Act, or the payment to the Company of profits arising from the purchase and sale by Indemnitee of securities in violation of Section 306 of the Sarbanes-Oxley Act); provided, however, that to the fullest extent permitted by applicable law and to the extent Indemnitee is successful on the merits or otherwise with respect to any such Proceeding, the Expenses actually and reasonably incurred by Indemnitee in connection with any such Proceeding shall be deemed to be Expenses that are subject to indemnification hereunder.

8. **Contribution Claims.**

(a) If the indemnification provided in Section 1 is unavailable in whole or in part and may not be paid to Indemnitee for any reason other than those set forth in Section 7, then in respect to any Proceeding in which the Company is jointly liable with Indemnitee (or would be if joined in such Proceeding), to the fullest extent permitted by applicable law, the Company, in lieu of indemnifying Indemnitee, shall pay, in the first instance, the entire amount incurred by Indemnitee, whether for Expenses, judgments, fines or amounts paid in settlement, in connection with any Proceeding without requiring Indemnitee to contribute to such payment, and

the Company hereby waives and relinquishes any right of contribution it may have at any time against Indemnitee.

(b) With respect to a Proceeding brought against directors, officers, employees or agents of the Company (other than Indemnitee), to the fullest extent permitted by applicable law, the Company shall indemnify Indemnitee from any claims for contribution that may be brought by any such directors, officers, employees or agents of the Company (other than Indemnitee) who may be jointly liable with Indemnitee, to the same extent Indemnitee would have been entitled to such indemnification under this Agreement if such Proceeding had been brought against Indemnitee.

9. **No Imputation.** The knowledge and/or actions, or failure to act, of any director, officer, agent or employee of the Company or the Company itself shall not be imputed to Indemnitee for purposes of determining any rights under this Agreement.

10. **Determination of Good Faith.** For purposes of any determination of good faith, Indemnitee shall be deemed to have acted in good faith if Indemnitee's action is based on the records or books of account of the Enterprise, including financial statements, or on information supplied to Indemnitee by the officers of the Enterprise in the course of their duties, or on the advice of legal counsel for the Enterprise or the Board of Directors of the Enterprise or any counsel selected by any committee of the Board of Directors of the Enterprise or on information or records given or reports made to the Enterprise by an independent certified public accountant or by an appraiser, investment banker, compensation consultant, or other expert selected with reasonable care by the Enterprise or the Board of Directors of the Enterprise or any committee thereof. The provisions of this Section 10 shall not be deemed to be exclusive or to limit in any way the other circumstances in which the Indemnitee may be deemed to have met the applicable standard of conduct. Whether or not the foregoing provisions of this

Section are satisfied, it shall in any event be presumed that Indemnitee has at all times acted in good faith and in a manner Indemnitee reasonably believed to be in or not opposed to the best interests of the Company.

11. **Defined Terms and Phrases.** For purposes of this Agreement, the following terms shall have the following meanings:

(a) "Beneficial Owner" and "Beneficial Ownership" shall have the meanings set forth in Rule 13d-3 promulgated under the Exchange Act as in effect on the date hereof.

(b) "Change of Control" shall be deemed to occur upon the earliest of any of the following events:

(i) Acquisition of Stock by Third Party. Any Person is or becomes the Beneficial Owner, directly or indirectly, of securities of the Company representing fifteen percent (15%) or more of the combined voting power of the Company's then outstanding securities entitled to vote generally in the election of directors, unless (1) the change in the relative Beneficial Ownership of the Company's securities by any Person results solely from a reduction in the aggregate number of outstanding shares of securities entitled to vote generally in the election of directors, or (2) such acquisition was approved in advance by the Continuing

Directors and such acquisition would not constitute a Change of Control under part (iii) of this definition.

(ii) Change in Board of Directors. Individuals who, as of the date of this Agreement, constitute the Company's Board of Directors (the "Board"), and any new director whose election by the Board or nomination for election by the Company's stockholders was approved by a vote of at least two thirds of the directors then still in office who were directors on the date of this Agreement (collectively, the "Continuing Directors"), cease for any reason to constitute at least a majority of the members of the Board.

(iii) Corporate Transaction. The effective date of a reorganization, merger, or consolidation of the Company (a "Business Combination"), in each case, unless, following such Business Combination: (1) all or substantially all of the individuals and entities who were the Beneficial Owners of securities entitled to vote generally in the election of directors immediately prior to such Business Combination beneficially own, directly or indirectly, more than 51% of the combined voting power of the then outstanding securities of the Company entitled to vote generally in the election of directors resulting from such Business Combination (including a corporation which as a result of such transaction owns the Company or all or substantially all of the Company's assets either directly or through one or more subsidiaries) in substantially the same proportions as their ownership, immediately prior to such Business Combination, of the securities entitled to vote generally in the election of directors and with the power to elect at least a majority of the Board or other governing body of the surviving entity; (2) no Person (excluding any corporation resulting from such Business Combination) is the Beneficial Owner, directly or indirectly, of 15% or more of the combined voting power of the then outstanding securities entitled to vote generally in the election of directors of such corporation except to the extent that such ownership existed prior to the Business Combination; and (3) at least a majority of the Board of Directors of the corporation resulting from such Business Combination were Continuing Directors at the time of the execution of the initial agreement, or of the action of the Board of Directors, providing for such Business Combination.

(iv) Liquidation. The approval by the Company's stockholders of a complete liquidation of the Company or an agreement or series of agreements for the sale or disposition by the Company of all or substantially all of the Company's assets, other than factoring the Company's current receivables or escrows due (or, if such approval is not required, the decision by the Board to proceed with such a liquidation, sale or disposition in one transaction or a series of related transactions).

(v) Other Events. There occurs any other event of a nature that would be required to be reported in response to Item 6(e) of Schedule 14A of Regulation 14A (or a response to any similar item or any similar schedule or form) promulgated under the Exchange Act whether or not the Company is then subject to such reporting requirement.

(c) "Company" shall include, in addition to the resulting corporation, any constituent corporation (including any constituent of a constituent) absorbed in a consolidation or merger which, if its separate existence had continued, would have had power and authority to indemnify its directors, officers, and employees or agents, so that if Indemnitee is or was a director, officer, employee or agent of such constituent corporation, or is or was serving at the

request of such constituent corporation as a director, officer, trustee, general partner, managing member, fiduciary, employee or agent of any other enterprise, Indemnitee shall stand in the same position under the provisions of this Agreement with respect to the resulting or surviving corporation as Indemnitee would have with respect to such constituent corporation if its separate existence had continued.

(d) "Enterprise" means the Company and any other enterprise that Indemnitee was or is serving at the request of the Company as a director, officer, partner (general, limited or otherwise), member (managing or otherwise), trustee, fiduciary, employee or agent.

(e) "Exchange Act" means the Securities Exchange Act of 1934, as amended.

(f) "Expenses" shall include all direct and indirect costs, fees and expenses of any type or nature whatsoever, including all attorneys' fees and costs, retainers, court costs, transcript costs, fees of experts, witness fees, travel expenses, fees of private investigators and professional advisors, duplicating costs, printing and binding costs, telephone charges, postage, delivery service fees, any federal, state, local or foreign taxes imposed on Indemnitee as a result of the actual or deemed receipt of any payment under this Agreement (including taxes that may be imposed upon the actual or deemed receipt of payments under this Agreement with respect to the imposition of federal, state, local or foreign taxes), secretarial services and all other disbursements, obligations or expenses in connection with prosecuting, defending, preparing to prosecute or defend, investigating, being or preparing to be a witness in, settlement or appeal of, or otherwise participating in a Proceeding. Expenses also shall include any of the foregoing expenses incurred in connection with any appeal resulting from any Proceeding, including the principal, premium, security for, and other costs relating to any costs bond, supersedes bond, or other appeal bond or its equivalent. Expenses also shall include any interest, assessment or other charges imposed thereon and costs incurred in preparing statements in support of payment requests hereunder. Expenses, however, shall not include amounts paid in settlement by Indemnitee or the amount of judgments or fines against Indemnitee.

(g) "Independent Counsel" means an attorney or firm of attorneys, selected in accordance with the provisions of Section 2(c)(iii), who will not have otherwise performed services for the Company or Indemnitee within the last three years (other than with respect to matters concerning the rights of Indemnitee under this Agreement, or of other indemnitees under similar indemnity agreements).

(h) "Person" shall have the meaning as set forth in Section 13(d) and 14(d) of the Exchange Act as in effect on the date hereof; provided, however, that "Person" shall exclude: (i) the Company; (ii) any direct or indirect majority owned subsidiaries of the Company; (iii) any employee benefit plan of the Company or any direct or indirect majority owned subsidiaries of the Company or of any corporation owned, directly or indirectly, by the Company's stockholders in substantially the same proportions as their ownership of stock of the Company (an "Employee Benefit Plan"); and (iv) any trustee or other fiduciary holding securities under an Employee Benefit Plan.

(i) "Proceeding" shall include any actual, threatened, pending or completed action, suit, arbitration, mediation, alternate dispute resolution mechanism, investigation, inquiry,

administrative hearing or any other actual, threatened or completed proceeding, whether brought by a third party, a government agency, the Company or its Board of Directors or a committee thereof, whether in the right of the Company or otherwise and whether of a civil (including intentional or unintentional tort claims), criminal, administrative, legislative or investigative (formal or informal) nature, including any appeal therefrom, in which Indemnitee was, is, will or might be involved as a party, potential party, non-party witness or otherwise by reason of the fact that Indemnitee is or was a director, officer, employee or agent of the Company, by reason of any action (or failure to act) taken by Indemnitee or of any action (or failure to act) on Indemnitee's part while acting as a director, officer, employee or agent of the Company, or by reason of the fact that Indemnitee is or was serving at the request of the Company as a director, officer, partner (general, limited or otherwise), member (managing or otherwise), trustee, fiduciary, employee or agent of any other enterprise, in each case whether or not serving in such capacity at the time any liability or expense is incurred for which indemnification, reimbursement or advancement of expenses can be provided under this Agreement.

(j) In addition, references to "other enterprise" shall include another corporation, partnership, limited liability company, joint venture, trust, employee benefit plan or any other enterprise; references to "fines" shall include any excise taxes assessed on Indemnitee with respect to an employee benefit plan; references to "serving at the request of the Company" shall include any service as a director, officer, employee or agent of the Company which imposes duties on, or involves services by Indemnitee with respect to an employee benefit plan, its participants, or beneficiaries; and if Indemnitee acted in good faith and in a manner Indemnitee reasonably believed to be in the interest of the participants and beneficiaries of an employee benefit plan, Indemnitee shall be deemed to have acted in a manner "not opposed to the best interests of the Company" as referred to in this Agreement; references to "include" or "including" shall mean include or including, without limitation; and references to Sections, paragraphs or clauses are to Sections, paragraphs or clauses in this Agreement unless otherwise specified.

12. **Attorneys' Fees.** In the event that any Proceeding is instituted by Indemnitee under this Agreement to enforce or interpret any of the terms hereof, the Company shall indemnify Indemnitee against all Expenses actually and reasonably incurred by Indemnitee in connection with such Proceeding, unless a court of competent jurisdiction determines that each of the material assertions made by Indemnitee as a basis for such Proceeding were not made in good faith or were frivolous. In the event of a Proceeding instituted by or in the name of the Company under this Agreement or to enforce or interpret any of the terms of this Agreement, the Company shall indemnify Indemnitee against all Expenses actually and reasonably incurred by Indemnitee in connection with such Proceeding (including with respect to Indemnitee's counterclaims and cross-claims made in such action), unless a court of competent jurisdiction determines that each of Indemnitee's material defenses to such action were made in bad faith or were frivolous.

13. **Miscellaneous.**

(a) **Governing Law.** The validity, interpretation, construction and performance of this Agreement, and all acts and transactions pursuant hereto and the rights and

obligations of the parties hereto shall be governed, construed and interpreted in accordance with the laws of the state of Delaware, without giving effect to principles of conflicts of law.

(b) **Entire Agreement; Binding Effect.** Without limiting any of the rights of Indemnitee described in Section 3(b), this Agreement sets forth the entire agreement and understanding of the parties relating to the subject matter herein and merges all prior discussions and supersedes any and all previous agreements between them covering the subject matter herein. The indemnification provided under this Agreement applies with respect to events occurring before or after the effective date of this Agreement, and shall continue to apply even after Indemnitee has ceased to serve the Company in any and all indemnified capacities.

(c) **Amendments and Waivers.** No modification of or amendment to this Agreement, nor any waiver of any rights under this Agreement, shall be effective unless in writing signed by the parties to this Agreement. The failure by either party to enforce rights under this Agreement shall not be construed as a waiver of any rights of such party.

(d) **Successors and Assigns.** This Agreement shall be binding upon the Company and its successors (including any direct or indirect successor by purchase, merger, consolidation or otherwise to all or substantially all of the business and/or assets of the Company) and assigns, and inure to the benefit of Indemnitee and Indemnitee's heirs, executors, administrators, legal representatives and assigns. The Company shall require and cause any successor (whether direct or indirect by purchase, merger, consolidation or otherwise) to all or substantially all of the business and/or assets of the Company, by written agreement in form and substance satisfactory to Indemnitee, expressly to assume and agree to perform this Agreement in the same manner and to the same extent that the Company would be required to perform if no such succession had taken place.

(e) **Notices.** Any notice, demand or request required or permitted to be given under this Agreement shall be in writing and shall be deemed sufficient when delivered personally or by overnight courier or sent by email, or 48 hours after being deposited in the U.S. mail as certified or registered mail with postage prepaid, addressed to the party to be notified at such party's address as set forth on the signature page, as subsequently modified by written notice, or if no address is specified on the signature page, at the most recent address set forth in the Company's books and records.

(f) **Severability.** If one or more provisions of this Agreement are held to be unenforceable under applicable law, the parties agree to renegotiate such provision in good faith. In the event that the parties cannot reach a mutually agreeable and enforceable replacement for such provision, then (i) such provision shall be excluded from this Agreement, (ii) the balance of the Agreement shall be interpreted as if such provision were so excluded and (iii) the balance of the Agreement shall be enforceable in accordance with its terms.

(g) **Construction.** This Agreement is the result of negotiations between and has been reviewed by each of the parties hereto and their respective counsel, if any; accordingly, this Agreement shall be deemed to be the product of all of the parties hereto, and no ambiguity shall be construed in favor of or against any one of the parties hereto.

(h) **Counterparts.** This Agreement may be executed in any number of counterparts, each of which when so executed and delivered shall be deemed an original, and all of which together shall constitute one and the same agreement.

(i) **No Employment Rights.** Nothing contained in this Agreement is intended to create in Indemnitee any right to continued employment.

(j) **Company Position.** The Company shall be precluded from asserting, in any Proceeding brought for purposes of establishing, enforcing or interpreting any right to indemnification under this Agreement, that the procedures and presumptions of this Agreement are not valid, binding and enforceable and shall stipulate in any such court that the Company is bound by all the provisions of this Agreement and is precluded from making any assertion to the contrary.

(k) **Subrogation.** Subject to Section 3(e), in the event of payment under this Agreement, the Company shall be subrogated to the extent of such payment to all of the rights of recovery of Indemnitee, who shall execute all documents required and shall do all acts that may be necessary to secure such rights and to enable the Company to effectively bring suit to enforce such rights.

[Signature Page Follows]

The parties have executed this Agreement as of the date first set forth above.

THE COMPANY:

ARCADIA BIOSCIENCES, INC.

By: _____
(Signature)

Name: _____
Title: _____

Address:

_____

_____
United States

AGREED TO AND ACCEPTED:

INDEMNITEE:

_____
(PRINT NAME)

_____
(Signature)

Address:

_____

_____

Email: _____

ARCADIA BIOSCIENCES, INC.

2006 STOCK PLAN

(as Amended and Restated On May 4, 2012)

1. Purposes of the Plan. The purposes of this Stock Plan are to attract and retain the best available personnel for positions of substantial responsibility, to provide additional incentives to Employees, Directors and Consultants and to promote the success of the Company's business. Options granted under the Plan may be Incentive Stock Options or Nonstatutory Stock Options, as determined by the Administrator at the time of grant. Stock Purchase Rights may also be granted under the Plan.

2. Definitions. As used herein, the following definitions shall apply:

(a) "Administrator" means the Board or any of its Committees as shall be administering the Plan in accordance with Section 4 hereof.

(b) "Applicable Laws" means the requirements relating to the administration of stock option plans under U.S. state corporate laws, U.S. federal and state securities laws, the Code, any stock exchange or quotation system on which the Common Stock is listed or quoted and the applicable laws of any other country or jurisdiction where Options or Stock Purchase Rights are granted under the Plan.

(c) "Board" means the Board of Directors of the Company.

(d) [Intentionally Omitted]

(e) "Code" means the Internal Revenue Code of 1986, as amended.

(f) "Committee" means a committee of Directors appointed by the Board in accordance with Section 4 hereof.

(g) "Common Stock" means the Common Stock of the Company.

(h) "Company" means Arcadia Biosciences, Inc., an Arizona corporation.

(i) "Consultant" means any person who is engaged by the Company or any Parent or Subsidiary to render consulting or advisory services for such entity.

(j) "Director" means a member of the Board of Directors of the Company.

(k) "Disability" means the definition under the long-term disability policy of the Company to which the Optionee provides services regardless of whether the Optionee is covered by such policy. If the Company to which the Optionee provides service does not have a long-term disability plan in place, "Disability" means that an Optionee is unable to carry out the responsibilities and functions of the position held by the Optionee by reason of any medically

determinable physical or mental impairment for a period of not less than ninety (90) consecutive days. An Optionee will not be considered to have incurred a Disability unless he or she furnishes proof of such impairment sufficient to satisfy the Administrator in its discretion.

(l) "Employee" means any person, including Officers and Directors, employed by the Company or any Parent or Subsidiary of the Company. A Service Provider shall not cease to be an employee in the case of (i) any leave of absence approved by the Company or (ii) transfers between locations of the Company or between the Company, its Parent, any Subsidiary, or any successor. For purposes of Incentive Stock Options, no such leave may exceed three (3) months, unless reemployment upon expiration of such leave is guaranteed by statute or contract. If reemployment upon expiration of a leave of absence approved by the Company is not so guaranteed, then three (3) months and one (1) day following the expiration of such three (3) month period, any Incentive Stock Option held by the Optionee shall cease to be treated as an Incentive Stock Option and shall be treated for tax purposes as a Nonstatutory Stock Option. Neither service as a Director nor payment of a director's fee by the Company shall be sufficient to constitute "employment" by the Company.

(m) "Exchange Act" means the Securities Exchange Act of 1934, as amended.

(n) "Fair Market Value" means, as of any time, the value of Common Stock determined as follows:

(i) If the Common Stock granted, or to be granted to a Service Provider under this Plan, is listed on any established stock exchange or a national market system, including without limitation The NASDAQ Global Select Market, The NASDAQ Global Market or The NASDAQ Capital Market of The NASDAQ Stock Market LLC, its Fair Market Value shall be the closing sales price for such stock (or the closing bid, if no sales were reported) as quoted on such exchange or system for the last market trading day prior to the time of determination, as reported in *The Wall Street Journal* or such other source as the Administrator deems reliable;

(ii) If the Common Stock granted, or to be granted to a Service Provider under this Plan, is regularly quoted by a recognized securities dealer but selling prices are not reported, its Fair Market Value shall be the means between the high bid and low asked prices for such Common Stock on the last market trading day prior to the day of determination; or

(iii) In the absence of an established market for the Common Stock of the type described in (i) and (ii), above, the Fair Market Value thereof shall be determined by the Administrator in good faith and in a manner consistent with Applicable Laws.

(o) "Incentive Stock Option" means an Option intended to qualify as an incentive stock option within the meaning of Section 422 of the Code.

(p) "Nonstatutory Stock Option" means an Option not intended to qualify as an Incentive Stock Option.

(q) "Officer" means a person who is an officer of the Company within the meaning of Section 16 of the Exchange Act and the rules and regulations promulgated thereunder.

(r) "Option" means a stock option granted pursuant to the Plan.

(s) "Option Agreement" means a written or electronic agreement between the Company and an Optionee evidencing the terms and conditions of an individual Option grant. The Option Agreement is subject to the terms and conditions of the Plan.

(t) "Option Exchange Program" means a program whereby outstanding Options are exchanged for Options with a lower exercise price.

(u) "Optioned Stock" means the Common Stock subject to an Option or a Stock Purchase Right.

(v) "Optionee" means the holder of an outstanding Option or Stock Purchase Right granted under the Plan.

(w) "Parent" means a "parent corporation," whether now or hereafter existing, as defined in Section 424(e) of the Code.

(x) "Plan" means this 2006 Stock Plan, as amended and restated on May 29, 2008, September 1, 2009, and May 4, 2012.

(y) "Registration Date" means the first to occur of (i) the closing of the first sale to the general public pursuant to a registration statement filed with and declared effective by the Securities and Exchange Commission under the Securities Act of 1933, as amended, of (A) the Common Stock or (B) the same class of securities of a successor corporation (or its Parent) issued pursuant to a merger or consolidation of the Company in exchange for or in substitution of the Common Stock; and (ii) in the event of such merger or consolidation, the date of the consummation of the merger or consolidation if the same class of securities of the successor corporation (or its Parent) issuable in such merger or consolidation shall have been sold to the general public pursuant to a registration statement filed with and declared effective by the Securities and Exchange Commission under the Securities Act of 1933, as amended, on or prior to the date of consummation of such merger or consolidation.

(z) "Restricted Stock" means shares of Common Stock acquired pursuant to a grant of a Stock Purchase Right under Section 11 below.

(aa) "Retirement" means that an Optionee voluntarily ceases to be an Employee due to such Optionee having Retired. An Optionee will not be considered to have Retired if (i) Optionee is not an Employee at the time of termination, or (ii) Optionee's termination as an Employee is involuntary, or (iii) Optionee has not reached the age of 60 on or before the effective date of termination, or (iv) Optionee has reached the age of 60 on or before the effective date of termination, but has not completed the requisite years of service as set forth below:

Age of Optionee on Date of Termination	Years of Service on Date of Termination
60	10
61	9
62	8
63	7
64	6
65	5
66 or older	2 or more

(bb) "SEC" means the Securities and Exchange Commission.

(cc) "Section 16(b)" means Section 16(b) of the Exchange Act.

(dd) "Securities Act" means the Securities Act of 1933, as amended.

(ee) "Service Provider" means an Employee, Director or Consultant.

(ff) "Share" means a share of Common Stock, as adjusted in accordance with Section 12 below.

(gg) "Stock Purchase Right" means a right to purchase Common Stock pursuant to Section 11 below.

(hh) "Subsidiary" means a "subsidiary corporation," whether now or hereafter existing, as defined in Section 424(f) of the Code. In addition, where not prohibited by the Code, "subsidiary corporation" also means any non-corporate entities deemed to be "majority-owned" subsidiaries under Rule 701 of the Securities Act, as interpreted by the SEC, including but not limited to those set forth in the SEC no-action letter granted to Sutter Surgery Centers, Inc., on November 10, 1993.

(ii) "U.S." means the United States of America.

3. Stock Subject to the Plan. Subject to the provisions of Section 12 of the Plan, the maximum aggregate number of Shares that may be subject to option and sold under the Plan is eighteen million (18,000,000) Shares. The Shares may be authorized but unissued, or reacquired Common Stock.

If an Option or Stock Purchase Right expires or becomes unexercisable without having been exercised in full, or is surrendered pursuant to an Option Exchange Program, the unpurchased Shares which were subject thereto shall become available for future grant or sale under the Plan (unless the Plan has

terminated). However, Shares that have actually been issued under the Plan, upon exercise of either an Option or Stock Purchase Right, shall not be returned to the Plan and shall not become available for future distribution under the Plan, except that if

Shares of Restricted Stock are repurchased by the Company at their original purchase price, such Shares shall become available for future grant under the Plan.

4. Administration of the Plan.

(a) Administrator. The Plan shall be administered by the Board or a Committee appointed by the Board, which Committee shall be constituted to comply with Applicable Laws, including, but not limited to Rule 16b-3 of the Securities Act and Section 162(m) of the Code (at such time as the Company is subject to the Exchange Act).

(b) Powers of the Administrator. Subject to the provisions of the Plan and, in the case of a Committee, the specific duties delegated by the Board to such Committee, and subject to the approval of any relevant authorities, the Administrator shall have the authority in its discretion:

(i) to determine the Fair Market Value;

(ii) to select the Service Providers to whom Options and Stock Purchase Rights may from time to time be granted hereunder;

(iii) to determine the number of Shares to be covered by each such award granted hereunder;

(iv) to approve forms of agreement for use under this Plan;

(v) to determine the terms and conditions, of any Option or Stock Purchase Right granted hereunder. Such terms and conditions shall include, but are not limited to, the exercise price, the time or times when Options or Stock Purchase Rights may be exercised (which may be based on performance criteria), any vesting acceleration or waiver of forfeiture restrictions, and any repurchase rights, restriction, or limitation regarding any Option or Stock Purchase Right or the Common Stock relating thereto, based in each case on such factors as the Administrator, in its sole discretion, shall determine.

(vi) to determine whether and under what circumstances an Option may be settled in cash under subsection 9(e) instead of Common Stock;

(vii) to reduce the exercise price of any Option to the then current Fair Market Value if the Fair Market Value of the Common Stock covered by such Option has declined since the date the Option was granted;

(viii) to initiate an Option Exchange Program;

(ix) to prescribe, amend and rescind rules and regulations relating to the Plan, including rules and regulations relating to sub-plans established for the purpose of qualifying for preferred tax treatment under foreign tax laws;

(x) to allow Optionees to satisfy withholding tax obligations by electing to have the Company withhold the Shares to be issued upon exercise of an Option or

Stock Purchase Right that number of Shares having a Fair Market Value equal to the amount required to be withheld. The Fair Market Value of the Shares to be withheld shall be determined on the date that the amount of tax to be withheld is to be determined. For the purposes of establishing the amount of Shares that may be used to satisfy an Optionee's tax withholding obligations, the Administrator shall limit the Shares used for withholding to the minimum statutory withholding rates for federal and state tax purposes, including payroll taxes on such supplemental income tax. All elections by Optionees to have Shares withheld for this purpose shall be made in such form and under such conditions as the Administrator may deem necessary or advisable; and

(xi) to construe and interpret the terms of the Plan and awards granted pursuant to the Plan; provided, however, the Administrator shall take all necessary action to insure that any awards granted pursuant to the Plan to the chief executive officer and the four highest compensated Officers of the Company are administered in accordance with Section 162(m)(4)(B) or (C) of the Code and applicable regulations (at such time as the Company is subject to the Exchange Act).

(c) Effect of Administrator's Decision. All decisions, determinations and interpretations of the Administrator shall be final and binding on all Optionees.

5. Eligibility.

(a) Nonstatutory Stock Options and Stock Purchase Rights may be granted to Service Providers. Incentive Stock Options may be granted only to Employees.

(b) Each Option shall be designated in the Option Agreement as either an Incentive Stock Option or a Nonstatutory Stock Option. However, notwithstanding such designation, to the extent that the aggregate Fair Market Value of the Shares with respect to which Incentive Stock Options are exercisable for the first time by the Optionee during any calendar year (under all plans of the Company and any Parent or Subsidiary) exceeds One Hundred Thousand Dollars ($100,000), such Options shall be treated as Nonstatutory Stock Options. For purposes of this Section 5(b), Incentive Stock Options shall be taken into account in the order in which they were granted. The Fair Market Value of the Shares shall be determined as of the time the Option with respect to such Shares is granted.

(c) Neither the Plan nor any Option or Stock Purchase Right shall confer upon any Optionee any right with respect to continuing the Optionee's relationship as a Service Provider with the Company, nor shall it interfere in any way with his or her right or the Company's right to terminate such relationship at any time, with or without cause.

6. Term of Plan. The Plan shall become effective upon its adoption by the Board. It shall continue in effect for a term of 10 years unless sooner terminated under Section 14 of the Plan.

7. Term of Option. The term of each Option shall be stated in the Option Agreement; provided, however, that the term shall be no more than 10 years from the date of grant thereof. In the case of an Incentive Stock Option granted to an Optionee who, at the time the Option is granted, owns stock representing more than 10% of the voting power of all classes

of stock of the Company or any Parent or Subsidiary, the term of the Option shall be five years from the date of grant or such shorter term as may be provided in the Option Agreement.

8. Option Exercise Price and Consideration.

(a) The per share exercise price for the Shares to be issued upon exercise of an Option shall be such price as is determined by the Administrator, but shall be subject to the following:

(i) In the case of an Incentive Stock Option;

(A) granted to an Employee who, at the time of grant of such Option, owns stock representing more than 10% of the voting power of all classes of stock of the Company or any Parent or Subsidiary of the Company, the exercise price shall be no less than 110% of the Fair Market Value per Share on the date of grant;

(B) granted to any other Employee, the per Share exercise price shall be no less than 100% of the Fair Market Value per Share on the date of grant.

(C) In the case of a Nonstatutory Stock Option; the per Share exercise price shall be no less than 100% of the Fair Market Value per Share on the date of grant.

(b) The consideration to be paid for the Shares to be issued upon exercise of an Option, including the method of payment, shall be determined by the Administrator (and, in the case of an Incentive Stock Option, shall be determined at the time of grant). Such consideration may consist of

(i) cash,

(ii) check,

(iii) promissory note,

(iv) other Shares which (x) in the case of Shares acquired upon exercise of an Option, have been owned by the Optionee for more than six months on the date of surrender, and (y) have a Fair Market Value on the date of surrender equal to the aggregate exercise price of the Shares as to which such Optionee shall be exercised,

(v) consideration received by the Company under a cashless exercise program implemented by the Company in connection with the Plan, or

(vi) any combination of the foregoing methods of payment.

In making its determination as to the type of consideration to accept, the Administrator shall consider if acceptance of such consideration may be reasonably expected to benefit the Company.

9. Exercise of Option.

(a) Procedure for Exercise; Rights as a Stockholder. Any Option granted hereunder shall be exercisable according to the terms hereof at such times and under such conditions as determined by the Administrator and set forth in the Option Agreement. Unless the Administrator provides otherwise, vesting of Options granted hereunder shall be tolled during any unpaid leave of absence. An Option may not be exercised for a fraction of a Share.

An Option shall be deemed exercised when the Company receives: (i) written or electronic notice of exercise (in accordance with the Option Agreement) from the person entitled to exercise the Option, (ii) full payment for the Shares with respect to which the Option is exercised and, in the case of a Nonstatutory Option, arrangements satisfactory to the Company to satisfy any federal, state, local or foreign withholding tax obligations that may arise in connection with the exercise of the Nonstatutory Option. Full payment may consist of any consideration and method of payment authorized by the Administrator and permitted by the Option Agreement and the Plan. Shares issued upon exercise of an Option shall be issued in the name of the Optionee. Until the Shares are issued (as evidenced by the appropriate entry on the books of the Company or of a duly authorized transfer agent of the Company), no right to vote or receive dividends or any other rights as a stockholder shall exist with respect to the Shares, notwithstanding the exercise of the Option. The Company shall issue (or cause to be issued) such Shares promptly after the Option is exercised. No adjustment will be made for a dividend or other right for which the record date is prior to the date the Shares are issued, except as provided in Section 12 of the Plan.

Exercise of an Option in any manner shall result in a decrease in the number of Shares thereafter available, both for purposes of the Plan and for sale under the Option, by the number of Shares as to which the Option is exercised.

(b) Termination of Relationship as a Service Provider. In the case of a Nonstatutory Stock Option, if an Optionee ceases to be a Service Provider (except as set forth in subsections (c), (d), and (e), below), such Optionee may exercise his or her Option within such period of time as is specified in the Option Agreement (of at least 30 days) to the extent that the Option is vested on the date of termination (but in no event later than the expiration of the term of the

Option as set forth in the Option Agreement). In the case of an Incentive Stock Option, the Option shall remain exercisable for three months following the Optionee's termination, or such shorter time period set forth in the Option Agreement. If, on the date of termination, the Optionee is not vested as to his or her entire Option, the Shares covered by the unvested portion of the Option shall revert to the Plan. If, after termination, the Optionee does not exercise his or her Option within the time specified herein, the Option shall terminate, and the Shares covered by such Option shall revert to the Plan.

(c) Retirement of Optionee. In the case of a Nonstatutory Stock Option, if an Optionee ceases to be an Employee as a result of Optionee's Retirement, unless as otherwise provided in the Option Agreement and to the extent the Option is vested on the date of termination, the Option may be exercised at any time prior to the Expiration Date. In the case of an Incentive Stock Option, the Option shall remain exercisable for three months following the Optionee's termination, or such shorter time period set forth in the Option Agreement. If, on the date of termination, the Optionee is not vested as to his or her entire Option, the Shares covered by the unvested portion of the Option shall revert to the Plan. If, after Optionee's termination,

the Option is not exercised within the time specified herein, the Option shall terminate, and the Shares covered by such Option shall revert to the Plan.

(d) Disability of Optionee. In the case of a Nonstatutory Stock Option, if an Optionee ceases to be a Service Provider as a result of the Optionee's Disability, unless as otherwise provided in the Option Agreement and to the extent the Option is vested on the date of termination, the Option may be exercised at any time prior to the Expiration Date. In the case of an Incentive Stock Option, the Option shall remain exercisable for 12 months following the Optionee's termination, or such shorter period set forth in the Option Agreement. If, on the date of termination, the Optionee is not vested as to his or her entire Option, the Shares covered by the unvested portion of the Option shall revert to the Plan. If, after termination, the Option is not exercised within the time specified herein, the Option shall terminate, and the Shares covered by such Option shall revert to the Plan.

(e) Death of Optionee. In the case of a Nonstatutory Stock Option, if an Optionee ceases to be a Service Provider as a result of Optionee's death, unless as otherwise provided in the Option Agreement and to the extent the Option is vested on the date of Optionee's death, the Option may be exercised at any time prior to the Expiration Date by the Optionee's estate or by a person who acquires the right to exercise the Option by bequest or inheritance. In the case of an Incentive Stock Option, the Option shall remain exercisable for 12 months following the Optionee's death, or such shorter period set forth in the Option Agreement. If, at the time of death, the Optionee is not vested as to the entire Option, the Shares covered by the unvested portion of the Option shall immediately revert to the Plan. If the Option is not exercised within the time specified herein, the Option shall terminate, and the Shares covered by such Option shall revert to the Plan.

(f) Buyout Provision. The Administrator may at any time offer to buy for a payment in cash or Shares, an Option previously granted, based on such terms and conditions as the Administrator shall establish and communicate to the Optionee at the time that such offer is made. Prior to any such offers, the Administrator shall consult the Company's accountants.

10. Transferability and Non-Transferability of Options and Stock Purchase Rights. Incentive Stock Options may not be sold, pledged, assigned, hypothecated, transferred, or disposed of in any manner other than by will or by the laws of descent or distribution and may be exercised, during the lifetime of the Optionee, only by the Optionee. Subject to compliance with all Applicable Laws, the Administrator may in its discretion grant transferable Nonstatutory Stock Options and Stock Purchase Rights in accordance with the terms set forth in the applicable Option Agreement or Restricted Stock purchase agreement.

11. Stock Purchase Rights.

(a) Rights to Purchase. Stock Purchase Rights may be issued either alone, in addition to, or in tandem with other awards granted under the Plan and/or cash awards made outside of the Plan. After the Administrator determines that it will offer Stock Purchase Rights under the Plan, it shall advise the offeree in writing or electronically of the terms, conditions and restrictions related to the offer, including the number of Shares that such person shall be entitled to purchase, the price to be paid, and the time within which such person must accept such offer.

The offer shall be accepted by execution of a Restricted Stock purchase agreement in the form determined by the Administrator. The purchase price of the Restricted Stock purchased by a person shall be not less than one hundred percent (100%) of the Fair Market Value per Share on the date of grant.

(b) Other Provisions. The Restricted Stock purchase agreement shall contain such other terms, provisions and conditions not inconsistent with the Plan as may be determined by the Administrator in sole discretion.

(c) Rights as a Stockholder. Once the Stock Purchase Right is exercised, the purchaser shall have the rights equivalent to those of a stockholder and shall be a stockholder when his or her purchase is entered upon the records of the duly authorized transfer agent of the Company. No adjustment shall be made for a dividend or other right for which the record date is prior to the date the Stock Purchase Right is exercised, except as provide in Section 12 of the Plan.

12. Adjustments Upon Changes in Capitalization, Merger or Asset Sale.

(a) Changes in Capitalization. Subject to any required action by the stockholders of the Company, the number of shares of Common Stock covered by each outstanding Option or Stock Purchase Right, and the number of shares of Common Stock which have been authorized for issuance under the Plan but as to which no Options or Stock Purchase Rights have yet been granted or which have been returned to the Plan upon cancellation or expiration of an Option or Stock Purchase Right, as well as the price per share of Common Stock covered by each such outstanding Option or Stock Purchase Right, shall be proportionately adjusted for any increase or decrease in the number of issued shares of Common Stock resulting from a stock split, reverse stock split, stock dividend, combination or reclassification of the Common Stock, or any other increase or decrease in the number of issued shares of Common Stock effected without receipt of consideration by the Company. The conversion of any convertible securities of the Company shall not be deemed to have been "effected without receipt of consideration." Such adjustment shall be made by the Board, whose determination in that respect shall be final, binding and conclusive. Except as expressly provided herein, no issuance by the Company of shares of stock of any class, or securities convertible into shares of stock of any class, shall affect, and no adjustment by reason thereof shall be made with respect to, the number of price of shares of Common Stock subject to an Option or Stock Purchase Right.

(b) Dissolution or Liquidation. In the event of the proposed dissolution or liquidation of the Company, the Administrator shall notify each Optionee as soon as practicable prior to the effective date of such proposed transaction. The Administrator in its discretion may provide for an Optionee to have

the right to exercise his or her Option or Stock Purchase Right until 15 days prior to such transaction as to all of the Optioned Stock covered thereby, including Shares as to which the Option or Stock Purchase Right would not otherwise be exercisable. In addition, the Administrator may provide that any Company repurchase option applicable to any Shares purchased upon exercise of an Option or Stock Purchase Right shall lapse as to all such Shares, provided the proposed dissolution or liquidation takes place at the time and in the manner contemplated. To the extent it has not been previously exercised, an Option or Stock Purchase Right will terminate immediately prior to the consummation of such proposed action.

(c) Merger; Consolidation; or Asset Sale. If the Company is a party to a merger, consolidation or the sale of all or substantially all of the assets of the Company, outstanding Options and Stock Purchase Rights shall be subject to the agreement of merger, consolidation or asset sale. Such agreement shall provide for any of the following:

(i) The assumption of outstanding Options or Stock Purchase Rights by the surviving corporation or its Parent;

(ii) The continuation of outstanding Options or Stock Purchase Rights by the Company, if the Company is the surviving corporation;

(iii) The payment of a cash settlement equal to, in the case of Options, (a) the difference between the amount to be paid for one Share under the agreement and the Exercise Price multiplied by (b) the number of Shares subject to the Option, vested or unvested, or both, as determined by the Company; and, in the case of Stock Purchase Rights, (a) the amount to be paid for one Share under the agreement multiplied by (b) the number of vested or unvested Shares, as determined by the Company; or

(iv) The acceleration of the vesting of outstanding Options and Stock Purchase Rights, with notification by the Administrator to the Optionees, indicating that such Options or Stock Purchase Rights shall be exercisable for 15 days from the date of such notice and termination of the Options and Stock Purchase Rights after such period; provided if such transaction does not occur, the acceleration of the Optionees' vesting shall be voided and the Optionees' vesting status shall return to what is was prior to the notice.

13. Time of Granting Options and Stock Purchase Rights. The date of grant of an Option or Stock Purchase Right shall, for all purposes, be the date on which the Administrator makes the determination granting such Option or Stock Purchase Right, or such other date as is determined by the Administrator. Notice of the determination shall be given to each Service Provider to whom an Option or Stock Purchase Right is so granted within a reasonable time after the date of such grant.

14. Amendment and Termination of the Plan.

(a) Amendment and Termination. The Board may at any time amend, alter, suspend or terminate the Plan.

(b) Stockholder Approval. The Board shall obtain stockholder approval of any Plan amendment to the extent necessary and desirable to comply with Applicable Laws.

(c) Effect of Amendment or Termination. No amendment, alteration, suspension or termination of the Plan shall impair the rights of any Optionee, unless mutually agreed otherwise between the Optionee and the Administrator, which agreement must be in writing and signed by the Optionee and the Company. Termination of the Plan shall not affect the Administrator's ability to exercise the powers granted to it hereunder with respect to the Options granted under the Plan prior to the date of such termination.

15. Conditions Upon Issuance of Shares.

(a) Legal Compliance. Shares shall not be issued upon the exercise of an Option unless the exercise of such Option and the issuance and delivery of such Shares shall comply with Applicable Laws and shall be further subject to the approval of counsel for the Company with respect to such compliance.

(b) Investment Representations. As a condition to the exercise of an Option, the Administrator may require the person exercising such Option to represent and warrant at the time of any such exercise that the Shares are being purchased only for investment and without any present intention to sell or distribute such Shares if, in the opinion of counsel for the Company, such a representation is required.

16. Inability to Obtain Authority. The inability of the Company to obtain authority from any regulatory body having jurisdiction, which authority is deemed by the Company's counsel to be necessary to the lawful issuance and sale of any Shares hereunder, shall relieve the Company of any liability in respect of the failure to issue or sell such Shares as to which requisite authority shall not have been obtained.

17. Reservation of Shares. The Company, during the term of this Plan, shall at all times reserve and keep available such number of Shares as shall be sufficient to satisfy the requirements of the Plan.

18. Stockholder Approval. The Plan shall be subject to approval by the stockholders of the Company within 12 months after the date the Plan is adopted. Such stockholder approval shall be obtained in the degree and manner required under Applicable Law.

19. Information to Optionees and Purchasers. To the extent required under Applicable Law, the Company shall provide to each Optionee and to each individual who acquires Shares pursuant to the Plan, not less frequently than annually during the period such Optionee or purchaser has one or more Options or Stock Purchase Rights outstanding, and, in the case of an individual who acquires Shares pursuant to the Plan, during the period such individual owns such Shares, copies of annual financial statements, where required by Applicable Laws. The Company shall not be required to provide such statements to key employees whose duties in connection with the Company assure their access to equivalent information.

ARCADIA BIOSCIENCES, INC.
2006 STOCK PLAN
NON-QUALIFIED STOCK OPTION AGREEMENT

(October 29, 2014 Date of Grant)

This Option Agreement is made and entered into by and between Arcadia Biosciences, Inc. ("Company") and [·] ("Optionee"), as of the 29th day of October, 2014 ("Date of Grant").

RECITALS

A. The Board of Directors of the Company has adopted the Arcadia Biosciences, Inc. 2006 Stock Plan ("Plan") as an incentive to enhance the Company's ability to attract and retain the best available individuals for employment and advisory positions of substantial responsibility by providing an opportunity to have a proprietary interest in the success of the Company.

B. The Board has approved the granting of options to the Optionee pursuant to the Plan to provide an incentive to the Optionee to focus on the long-term growth of the Company.

1. ***Grant of Option***. The Company grants to the Optionee the option ("Option") to purchase [·] shares (subject to adjustment in the Plan, as stated in paragraph 10 herein) of the Common Stock of Arcadia Biosciences, Inc. ("Stock") on the terms and conditions in this Agreement. The Option granted under this Agreement **is not** intended to be an "incentive stock option" under Section 422 of the Internal Revenue Code of 1986, as amended.

2. ***Vesting of Option***. The Option shall vest and become exercisable in accordance with the schedule below:

50% of the shares subject to the Option will be fully vested and exercisable effective as of February 7, 2015 (the "Initial Vesting Date"), subject to Optionee's continued service through the Initial Vesting Date, and;

50% of the shares subject to the Option will vest and become exercisable in 24 equal monthly installments following the Initial Vesting Date, with the first such monthly vesting date taking place on February 28, 2015 and subsequent vesting dates on the last day of the next 23 months thereafter (with the last vesting date on January 31, 2017), subject to Optionee's continued service through the applicable vesting date.

2.1 ***Accelerated Vesting.*** If (i) the Company is a party to a merger or consolidation, or series of related transactions, which results in the voting securities of the Company outstanding immediately prior thereto failing to continue to represent (either by remaining outstanding or by being converted into voting securities of

the surviving or another entity) more than 50% of the combined voting power of the voting securities of the surviving entity outstanding immediately after such merger or consolidation; or (ii) any person or entity subsequent to the date of this Agreement becomes the beneficial owner (as defined in Rule 13-d(3) promulgated under the Securities Exchange Act), directly or indirectly, of securities of the Company representing more than 50% of the combined voting power of the Company's then-outstanding securities; or (iii) the Company sells all or substantially all of its assets, then all outstanding Options and Stock Purchase Rights will automatically become fully exercisable and all restrictions on outstanding Options and Stock Purchase Rights will lapse. Upon, or in anticipation of, such an event, the Company may cause every Option or Stock Purchase Right outstanding hereunder to terminate at a specific time in the future and will give each Optionee the right to exercise all outstanding Options and Stock Purchase Rights during a period of time as the Company, in its sole and absolute discretion, will determine.

3. ***Purchase Price***. The price at which the Optionee is entitled to purchase the Stock under the Option is $1.53 per share.

4. ***Term of Option***. The Option granted under this Agreement shall expire, unless otherwise exercised, 10 years from the Date of Grant, through and including the normal close of business of the Company on October 29, 2024 ("Expiration Date"), subject to earlier termination under paragraph 8 below.

5. ***Exercise of Option***. The Option may be exercised by the Optionee as to all or any part of the Stock then vested by delivery to the Company of written notice of exercise and payment of the purchase price as provided in paragraphs 6 and 7 below.

6. ***Method of Exercising Option***.

6.1 ***General***. Subject to the terms and conditions of this Option Agreement, the Option may be exercised by timely delivery to the Company of written notice in the form attached hereto as Exhibit A, which notice shall be effective on the date received by the Company ("Effective Date"). The notice shall state the Optionee's election to exercise the Option, the number of shares to which the election relates, the method of payment elected, the exact name or names in which the shares will be registered and the Social Security number of the Optionee. The notice must be signed by the Optionee and must be accompanied by payment of the purchase price. If the Option is exercised by a person or persons other than Optionee under paragraph 8 below, the notice must be signed by such other person or persons accompanied by proof acceptable to the Company of the legal right of such person or persons to exercise the Option. All shares delivered by the Company upon exercise of the Option shall be fully paid and non-assessable upon delivery.

6.2 ***Taxes***. No Shares will be delivered to the Optionee or other person pursuant to the exercise of the Option until the Optionee or other person has made arrangements acceptable to the Administrator for the satisfaction of applicable

income tax and employment tax withholding obligations, including, without limitation, such other tax obligations of the Optionee incident to the receipt of Shares. Upon exercise of the Option, the Company may offset or withhold (from any amount owed by the Company to the Optionee) or collect from the Optionee or other person an amount sufficient to satisfy such tax withholding obligations.

7. ***Method of Payment for Options***. Payment for shares purchased upon the exercise of the Option shall be made by the Optionee in cash or such other method permitted by the Board or the committee appointed by the Board to administer the Plan ("Committee") and communicated to the Optionee in writing prior to the date the Optionee exercises all or any portion of the Option.

8. ***Termination of Relationship as a Service Provider***.

8.1 ***General***. In the event that an Optionee ceases to be a Service Provider (as such is defined in the Plan) for any reason other than Retirement (as that term is defined in the Plan), death or Disability (as that term is defined in the Plan), then the Optionee may at any time within 30 days after the effective date of such termination exercise the Option to the extent that the Optionee was entitled to exercise the Option at the date of termination, provided that in no event shall the Option be exercisable after the Expiration Date.

8.2 ***Retirement of Optionee***. In the event of the Retirement of the Optionee, Optionee may exercise the Option at any time prior to the Expiration Date. An Option may be exercised following Retirement of the Optionee only to the extent that the Optionee was entitled to exercise the Option at the date of termination, and in no event shall the Option be exercisable after the Expiration Date. In the event of the Disability or death of the Optionee after Optionee's Retirement, the Option may be exercised at any time prior to the Expiration Date by the Optionee or the Optionee's legal representative or representatives in the case of Optionee's Disability or, in the case of Optionee's death, the person or persons entitled to do so under the Optionee's last will and testament or if the Optionee fails to make a testamentary disposition of such Option or shall die intestate, by the person or persons entitled to receive such Option under the applicable laws of descent and distribution. The Board shall have the right to require evidence satisfactory to it of the rights of any person or persons seeking to exercise the Option under this paragraph 8 to exercise the Option.

8.3 ***Death or Disability of Optionee***. In the event of the death or Disability of the Optionee, the Option may be exercised at any time prior to the Expiration Date by the Optionee or the Optionee's legal representative or representatives in the case of Optionee's Disability or, in the case of Optionee's death, the person or persons entitled to do so under the Optionee's last will and testament or if the Optionee fails to make a testamentary disposition of such Option or shall die intestate, by the person or persons entitled to receive such Option under the applicable laws of descent and distribution. An Option may be exercised following the death or Disability of the Optionee only if the Option was exercisable by the Optionee

immediately prior to Optionee's death or Disability. In no event shall the Option be exercisable after the Expiration Date. The Board shall have the right to require evidence satisfactory to it of the rights of any person or persons seeking to exercise the Option under this paragraph 8 to exercise the Option.

9. ***Nontransferability***. The Option granted by this Option Agreement shall be exercisable only during the term of the Option provided in paragraph 4 hereof and, except as provided in paragraph 8 above, only by the Optionee during his lifetime and while an Optionee of the Company. This Option shall not be transferable by the Optionee or any other person claiming through the Optionee, either voluntarily or involuntarily, except by will or the laws of descent and distribution or such other events as set forth in Section 8.4 of the Plan.

10. ***Adjustments in Number of Shares and Option Price***. In the event of a change in capitalization or such other event as specified in Section 13 of the Plan, the Board will adjust the remaining shares of Stock subject to this Option, all as set forth in Section 13 of the Plan.

11. ***Company Right of First Refusal***.

11.1 ***Transfer Notice***. Neither the Optionee nor a transferee (either being sometimes referred to herein as the "Holder") shall sell, hypothecate, encumber or otherwise transfer any Shares or any right or interest therein without first complying with the provisions of this paragraph 11 or obtaining the prior written consent of the Company. In the event the Holder desires to accept a bona fide third-party offer for any or all of the Shares, the Holder shall provide the Company with written notice (the "Transfer Notice") of:

a. The Holder's intention to transfer;

b. The name of the proposed transferee;

c. The number of Shares to be transferred; and

d. The proposed transfer price or value and terms thereof.

If the Holder proposes to transfer any Shares to more than one transferee, the Holder shall provide a separate Transfer Notice for the proposed transfer to each transferee. The Transfer Notice shall be signed by both the Holder and the proposed transferee and must constitute a binding commitment of the Holder and the proposed transferee for the transfer of the Shares to the proposed transferee subject to the terms and conditions of this Option Agreement.

11.2 ***Bona Fide Transfer***. If the Company determines that the information provided by the Holder in the Transfer Notice is insufficient to establish the bona fide nature of a proposed voluntary transfer, the Company shall give the Holder written notice of the Holder's failure to comply with the procedure described in this paragraph11, and the Holder shall have no right to transfer the Shares without

first complying with the procedure described in this paragraph11. The Holder shall not be permitted to transfer the Shares if the proposed transfer is not bona fide.

11.3 ***First Refusal Exercise Notice***. The Company shall have the right to purchase (the "Right of First Refusal") all but not less than all, of the Shares which are described in the Transfer Notice (the "Offered Shares") at any time within ninety (90) days after receipt of the Transfer Notice (the "Option Period"), provided, however, that if the Offered Shares are not Mature Shares (as defined below) then the Option Period shall be extended by the number of days necessary for the Offered Shares to become Mature Shares. The Offered Shares shall be repurchased at (i) the per share price or value and in accordance with the terms stated in the Transfer Notice (subject to paragraph 11.4 below) or (ii) the Fair Market Value of the Shares on the date on which the purchase is to be effected if no consideration is paid pursuant to the terms stated in the Transfer Notice, which Right of First Refusal shall be exercised by written notice (the "First Refusal Exercise Notice") to the Holder. "Mature Shares" shall mean the Shares that have been held by the Holder (and any successor Holder) for a period of more than six (6) months.

11.4 ***Payment Terms***. The Company shall consummate the purchase of the Offered Shares on the terms set forth in the Transfer Notice within 30 days after delivery of the First Refusal Exercise Notice; provided, however, that in the event the Transfer Notice provides for the payment for the Offered Shares other than in cash, the Company and/or its assigns shall have the right to pay for the Offered Shares by the discounted cash equivalent of the consideration described in the Transfer Notice as reasonably determined by the Administrator. Upon payment for the Offered Shares to the Holder or into escrow for the benefit of the Holder, the Company or its assigns shall become the legal and beneficial owner of the Offered Shares and all rights and interest therein or related thereto, and the Company shall have the right to transfer the Offered Shares to its own name or its assigns without further action by the Holder.

11.5 ***Assignment***. Whenever the Company shall have the right to purchase Shares under this Right of First Refusal, the Company may designate and assign one or more employees, officers, directors or shareholders of the Company or other persons or organizations, to exercise all or a part of the Company's Right of First Refusal.

11.6 ***Non-Exercise***. If the Company and/or its assigns do not collectively elect to exercise the Right of First Refusal within the Option Period or such earlier time if the Company and/or its assigns notifies the Holder that it will not exercise the Right of First Refusal, then the Holder may transfer the Shares upon the terms and conditions stated in the Transfer Notice, provided that:

(i) The transfer is made within forty-five (45) days of the earlier of (A) the date the Company and/or its assigns notify the Holder that the Right of

First Refusal will not be exercised or (B) the expiration of the Option Period; and

(ii) The transferee agrees in writing that such Shares shall be held subject to the provisions of this Option Agreement.

The Company shall have the right to demand further assurances from the Holder and the transferee (in a form satisfactory to the Company) that the transfer of the Offered Shares was actually carried out on the terms and conditions described in the Transfer Notice. No Offered Shares shall be transferred on the books of the Company until the Company has received such assurances, if so demanded, and has approved the proposed transfer as bona fide.

11.7 ***Expiration of Transfer Period***. Following such 45-day period, no transfer of the Offered Shares and no change in the terms of the transfer as stated in the Transfer Notice (including the name of the proposed transferee) shall be permitted without a new written Transfer Notice prepared and submitted in accordance with the requirements of this Right of First Refusal.

11.8 ***Termination of Right of First Refusal***. The provisions of this Right of First Refusal shall terminate as to all Shares upon the Registration Date.

11.9 ***Additional Shares or Substituted Securities***. In the event of any transaction described in Section 13 of the Plan, any new, substituted or additional securities or other property which is by reason of any such transaction distributed with respect to the Shares shall be immediately subject to the Right of First Refusal, but only to the extent the Shares are at the time covered by such right.

12. ***Delivery of Shares***. No shares of Stock shall be delivered upon exercise of the Option until (i) the purchase price shall have been paid in full in the manner herein provided; (ii) applicable taxes required to be withheld have been paid or withheld in full; (iii) approval of any governmental authority required in connection with the Option, or the issuance of shares thereunder, has been received by the Company; and (iv) if required by the Board, the Optionee has delivered to the Board a copy of the Investment Representation Statement in the form attached hereto as Exhibit B.

13. ***Securities Act***. The Company shall not be required to deliver any shares of Stock pursuant to the exercise of all or any part of the Option if, in the opinion of counsel for the Company, such issuance would violate the Securities Act of 1933 or any other applicable federal or state securities laws or regulations. The Board may require that the Optionee, prior to the issuance of any such shares pursuant to exercise of the Option, sign and deliver to the Company the Investment Representation Statement declaring (i) that the Optionee is purchasing the shares for investment and not with a view to the sale or distribution thereof; (ii) that the Optionee will not sell any shares received upon exercise of the Option or any other shares of the Company that the Optionee may then own or thereafter acquire except either (a) through a broker on a national securities exchange or (b) with the prior written approval of the Company; and (iii) containing such other terms

and conditions as counsel for the Company may reasonably require to assure compliance with the Securities Act of 1933 or other applicable federal or state securities laws and regulations.

14. ***Definitions; Copy of Plan***. To the extent not specifically provided herein, all capitalized terms used in this Option Agreement shall have the same meanings ascribed to them in the Plan. By the execution of this Agreement, the Optionee acknowledges receipt of a copy of the Plan.

15. ***Obligation to Exercise***. The Optionee shall have no obligation to exercise any option granted by this Agreement.

16. ***Governing Law***. This Option Agreement shall be interpreted and administered under the laws of the State of California.

17. ***Amendments***. This Option Agreement may be amended only by a written agreement executed by the Company and the Optionee.

IN WITNESS WHEREOF, the Company has caused this Option Agreement to be signed by its duly authorized representative and the Optionee has signed this Option Agreement as of the date first written above.

ARCADIA BIOSCIENCES, INC.

By: _____
Eric J. Rey
President and Chief Executive Officer

OPTIONEE

_____

EXHIBIT A

ARCADIA BIOSCIENCES, INC.

2006 STOCK PLAN

EXERCISE NOTICE

Arcadia Biosciences, Inc.
202 Cousteau Place
Suite 200
Davis, CA 95618
Attention: Secretary

Effective as of today, , the undersigned (the "Grantee") hereby elects to exercise the Grantee's option to purchase shares of the Common Stock (the "Shares") of Arcadia Biosciences, Inc. (the "Company"), under and pursuant to the Company's 2006 Stock Plan, as amended from time to time (the "Plan") and Non-Qualified Stock Option Award Agreement(s) (the "Option Agreements") as follows:

Date of Grant	Number of Share Options Exercised	Purchase Price per Share Option

Unless otherwise defined herein, the terms defined in the Plan shall have the same defined meanings in this Exercise Notice.

1. Representations of the Grantee. The Grantee acknowledges that the Grantee has received, read and understood the Plan and the Option Agreement and agrees to abide by and be bound by their terms and conditions.

2. Rights as Shareholder. Until the stock certificate evidencing such Shares is issued (as evidenced by the appropriate entry on the books of the Company or of a duly authorized transfer agent of the Company), no right to vote or receive dividends or any other rights as a shareholder shall exist with respect to the Shares, notwithstanding the exercise of the Option. The Company shall issue (or cause to be issued) such stock certificate promptly after the Option is exercised. No adjustment will be made for a dividend or other right for which the record date is prior to the date the stock certificate is issued, except as provided in Section 13 of the Plan.

The Grantee shall enjoy rights as a shareholder until such time as the Grantee disposes of the Shares or the Company and/or its assignee(s) exercises the Right of First Refusal. Upon such exercise, the Grantee shall have no further rights as a holder of the Shares so purchased except

the right to receive payment for the Shares so purchased in accordance with the provisions of the Option Agreement, and the Grantee shall forthwith cause the certificate(s) evidencing the Shares so purchased to be surrendered to the Company for transfer or cancellation.

3. Delivery of Payment. The Grantee herewith delivers to the Company the full Exercise Price for the Shares, which, to the extent selected, shall be deemed to be satisfied by use of the broker-dealer sale and remittance procedure to pay the Exercise Price provided in paragraph 7 of the Option Agreement.

4. Tax Consultation. The Grantee understands that the Grantee may suffer adverse tax consequences as a result of the Grantee's purchase or disposition of the Shares. The Grantee represents that the Grantee has consulted with any tax consultants the Grantee deems advisable in connection with the purchase or disposition of the Shares and that the Grantee is not relying on the Company for any tax advice.

5. Taxes. The Grantee agrees to satisfy all applicable federal, state and local income and employment tax withholding obligations and herewith delivers to the Company the full amount of such obligations or has made arrangements acceptable to the Company to satisfy such obligations. In the case of an Incentive Stock Option, the Grantee also agrees, as partial consideration for the designation of the Option as an Incentive Stock Option, to notify the Company in writing within thirty (30) days of any disposition of any shares acquired by exercise of the Option if such disposition occurs within two (2) years from the Date of Award or within one (1) year from the date the Shares were transferred to the Grantee.

6. Restrictive Legends. The Grantee understands and agrees that the Company shall cause the legends set forth below or legends substantially equivalent thereto, to be placed upon any certificate(s) evidencing ownership of the Shares together with any other legends that may be required by the Company or by state or federal securities laws:

THE SECURITIES REPRESENTED HEREBY HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933 (THE "ACT") OR ANY STATE SECURITIES LAWS AND MAY NOT BE OFFERED, SOLD OR OTHERWISE TRANSFERRED, PLEDGED OR HYPOTHECATED UNLESS AND UNTIL REGISTERED UNDER THE ACT OR, IN THE OPINION OF COUNSEL SATISFACTORY TO THE ISSUER OF THESE SECURITIES, SUCH OFFER, SALE OR TRANSFER, PLEDGE OR HYPOTHECATION IS IN COMPLIANCE THEREWITH.

THE SHARES REPRESENTED BY THIS CERTIFICATE ARE SUBJECT TO CERTAIN RESTRICTIONS ON TRANSFER, A RIGHT OF FIRST REFUSAL HELD BY THE ISSUER OR ITS ASSIGNEE(S) AS SET FORTH IN THE OPTION AGREEMENT BETWEEN THE ISSUER AND THE ORIGINAL HOLDER OF THESE SHARES, A COPY OF WHICH MAY BE OBTAINED AT THE PRINCIPAL OFFICE OF THE ISSUER. SUCH

TRANSFER RESTRICTIONS, INCLUDING THE RIGHT OF FIRST REFUSAL, ARE BINDING ON TRANSFEREES OF THESE SHARES.

7. Successors and Assigns. The Company may assign any of its rights under this Exercise Notice to single or multiple assignees, and this agreement shall inure to the benefit of the successors and assigns of the Company. Subject to the restrictions on transfer herein set forth, this Exercise Notice shall be binding upon the Grantee and his or her heirs, executors, administrators, successors and assigns.

8. Construction. The captions used in this Exercise Notice are inserted for convenience and shall not be deemed a part of this agreement for construction or interpretation. Except when otherwise indicated by the context, the singular shall include the plural and the plural shall include the singular. Use of the term "or" is not intended to be exclusive, unless the context clearly requires otherwise.

9. Administration and Interpretation. The Grantee hereby agrees that any question or dispute regarding the administration or interpretation of this Exercise Notice shall be submitted by the Grantee or by the Company to the Administrator. The resolution of such question or dispute by the Administrator shall be final and binding on all persons.

10. Governing Law; Severability. This Exercise Notice is to be construed in accordance with and governed by the internal laws of the State of California without giving effect to any choice of law Rule that would cause the application of the laws of any jurisdiction other than the internal laws of the State of California to the rights and duties of the parties. Should any provision of this Exercise Notice be determined by a court of law to be illegal or unenforceable, such provision shall be enforced to the fullest extent allowed by law and the other provisions shall nevertheless remain effective and shall remain enforceable.

11. Notices. Any notice required or permitted hereunder shall be given in writing and shall be deemed effectively given upon personal delivery, upon deposit for delivery by an internationally recognized express mail courier service or upon deposit in the United States mail by certified mail (if the parties are within the United States), with postage and fees prepaid, addressed to the other party at its address as shown below beneath its signature, or to such other address as such party may designate in writing from time to time to the other party.

12. Further Instruments. The parties agree to execute such further instruments and to take such further action as may be reasonably necessary to carry out the purposes and intent of this agreement.

13. Entire Agreement. The Plan and the Option Agreement are incorporated herein by reference and together with this Exercise Notice constitute the entire agreement of the parties with respect to the subject matter hereof and supersede in their entirety all prior undertakings and agreements of the Company and the Grantee with respect to the subject matter hereof, and may not be modified adversely to the Grantee's interest except by means of a writing signed by the Company and the Grantee. Nothing in the Plan, the Option Agreement and this Exercise Notice

(except as expressly provided therein) is intended to confer any rights or remedies on any persons other than the parties.

Submitted by:	Accepted by:
GRANTEE:	ARCADIA BIOSCIENCES, INC.
	By:
	Title:
(Signature)	
Address:	Address:
	202 Cousteau Place Suite 200 Davis, CA 95618

EXHIBIT B

ARCADIA BIOSCIENCES, INC.

2006 STOCK PLAN

INVESTMENT REPRESENTATION STATEMENT

GRANTEE:

COMPANY: ARCADIA BIOSCIENCES, INC.

SECURITY: COMMON STOCK

AMOUNT:

DATE:

In connection with the purchase of the above-listed Securities, the undersigned Grantee represents to the Company the following:

1. Grantee is aware of the Company's business affairs and financial condition and has acquired sufficient information about the Company to reach an informed and knowledgeable decision to acquire the Securities. Grantee is acquiring these Securities for investment for Grantee's own account only and not with a view to, or for resale in connection with, any "distribution" thereof within the meaning of the Securities Act of 1933, as amended (the "Securities Act").

2. Grantee acknowledges and understands that the Securities constitute "restricted securities" under the Securities Act and have not been registered under the Securities Act in reliance upon a specific exemption therefrom, which exemption depends upon among other things, the bona fide nature of Grantee's investment intent as expressed herein. Grantee further understands that the Securities must be held indefinitely unless they are subsequently registered under the Securities Act or an exemption from such registration is available. Grantee further acknowledges and understands that the Company is under no obligation to register the Securities. Grantee understands that the certificate evidencing the Securities will be imprinted with a legend that prohibits the transfer of the Securities unless they are registered or such registration is not required in the opinion of counsel satisfactory to the Company.

3. Grantee is familiar with the provisions of Rule 701 and Rule 144, each promulgated under the Securities Act, which, in substance, permit limited public resale of "restricted securities" acquired, directly or indirectly from the issuer thereof, in a non-public offering subject to the satisfaction of certain conditions. Rule 701 provides that if the issuer qualifies under Rule 701 at the time of the grant of the Option to the Grantee, the exercise will be exempt from registration under the Securities Act. In the event the Company becomes subject to the reporting requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, ninety

(90) days thereafter (or such longer period as any market stand-off agreement may require) the Securities exempt under Rule 701 may be resold, subject to the satisfaction of certain of the conditions specified by Rule 144, including: (1) the resale being made through a broker in an unsolicited "broker's transaction" or in transactions directly with a market maker (as said term is defined under the Securities Exchange Act of 1934); and, in the case of an affiliate, (2) the availability of certain public information about the Company, (3) the amount of Securities being sold during any three month period not exceeding the limitations specified in Rule 144(e), and (4) the timely filing of a Form 144, if applicable.

4. In the event that the Company does not qualify under Rule 701 at the time of grant of the Option, then the Securities may be resold in certain limited circumstances subject to the provisions of Rule 144, which requires the resale to occur not less than one year after the later of the date the Securities were sold by the Company or the date the Securities were sold by an affiliate of the Company, within the meaning of Rule 144; and, in the case of acquisition of the Securities by an affiliate, or by a non-affiliate who subsequently holds the Securities less than two (2) years, the satisfaction of the conditions set forth in sections (1), (2), (3) and (4) of the paragraph immediately above.

5. Grantee further understands that in the event all of the applicable requirements of Rule 701 or 144 are not satisfied, registration under the Securities Act, compliance with Regulation A, or some other registration exemption will be required; and that, notwithstanding the fact that Rules 144 and 701 are not exclusive, the Staff of the Securities and Exchange Commission has expressed its opinion that persons proposing to sell private placement securities other than in a registered offering and otherwise than pursuant to Rules 144 or 701 will have a substantial burden of proof in establishing that an exemption from registration is available for such offers or sales, and that such persons and their respective brokers who participate in such transactions do so at their own risk. Grantee understands that no assurances can be given that any such other registration exemption will be available in such event.

Grantee represents that Grantee is a resident of the state of .

Signature of Grantee:

_____

Date: _____

ARCADIA BIOSCIENCES, INC.

2015 OMNIBUS EQUITY INCENTIVE PLAN

1. Purposes of the Plan. The purposes of this Plan are (a) to attract and retain the best available personnel to ensure the Company's success and accomplish the Company's goals; (b) to incentivize Employees, Directors and Independent Contractors with long-term equity-based compensation to align their interests with the Company's stockholders, and (c) to promote the success of the Company's business.

The Plan permits the grant of Incentive Stock Options, Nonstatutory Stock Options, Restricted Stock, Restricted Stock Units, Stock Appreciation Rights, Performance Units and Performance Shares.

2. Definitions. As used herein, the following definitions will apply:

(a) "Administrator" means the Board or any of its Committees as will be administering the Plan, in accordance with Section 4 of the Plan.

(b) "Applicable Laws" means the requirements relating to the administration of equity-based awards under U.S. state corporate laws, U.S. federal and state securities laws, the Code, any stock exchange or quotation system on which the Common Stock is listed or quoted and the applicable laws of any foreign country or jurisdiction where Awards are, or will be, granted under the Plan.

(c) "Award" means, individually or collectively, a grant under the Plan of Options, Stock Appreciation Rights, Restricted Stock, Restricted Stock Units, Performance Units or Performance Shares.

(d) "Award Agreement" means the written or electronic agreement setting forth the terms and provisions applicable to each Award granted under the Plan. The Award Agreement is subject to the terms and conditions of the Plan.

(e) "Board" means the Board of Directors of the Company.

(f) "Change in Control" except as may otherwise be provided in a Stock Option Agreement, Restricted Stock Agreement or other applicable agreement, means the occurrence of any of the following:

(i) The consummation of a merger or consolidation of the Company with or into another entity or any other corporate reorganization, if the Company's shareholders immediately prior to such merger, consolidation or reorganization cease to directly or indirectly own immediately after such merger, consolidation or reorganization at least a majority of the combined voting power of the continuing or surviving entity's securities outstanding immediately after such merger, consolidation or other reorganization;

(ii) The consummation of the sale, transfer or other disposition of all or substantially all of the Company's assets (other than (x) to a corporation or other entity of which at least a majority of its combined voting power is owned directly or indirectly by the Company, (y) to a corporation or other entity owned directly or indirectly by the shareholders of the Company in substantially the same proportions as their ownership of the Common Stock of the Company or (z) to a continuing or surviving entity described in Section 2(f)(i) in connection with a merger, consolidation or corporate reorganization which does not result in a Change in Control under Section 2(f)(i));

(iii) A change in the effective control of the Company which occurs on the date that a majority of members of the Board is replaced during any twelve (12) month period by Directors whose appointment or election is not endorsed by a majority of the members of the Board prior to the date of the appointment or election. For purposes of this clause, if any Person (as defined below in Section 2(f)(iv)) is considered to be in effective control of the Company, the acquisition of additional control of the Company by the same Person will not be considered a Change in Control;

(iv) The consummation of any transaction as a result of which any Person becomes the "beneficial owner" (as defined in Rule 13d-3 under the Exchange Act), directly or indirectly, of securities of the Company representing at least fifty percent (50%) of the total voting power represented by the Company's then outstanding voting securities. For purposes of this Paragraph (iv), the term "person" shall have the same meaning as when used in sections 13(d) and 14(d) of the Exchange Act but shall exclude:

(1) a trustee or other fiduciary holding securities under an employee benefit plan of the Company or an affiliate of the Company;

(2) a corporation or other entity owned directly or indirectly by the shareholders of the Company in substantially the same proportions as their ownership of the Common Stock of the Company;

(3) the Company; and

(4) a corporation or other entity of which at least a majority of its combined voting power is owned directly or indirectly by the Company; or

(v) A complete winding up, liquidation or dissolution of the Company.

A transaction shall not constitute a Change in Control if its sole purpose is to change the state of the Company's incorporation or to create a holding company that will be owned in substantially the same proportions by the persons who held the Company's securities immediately before such transactions.

(g) "Code" means the Internal Revenue Code of 1986, as amended. Reference to a specific section of the Code or regulation thereunder shall include such section or regulation, any valid regulation promulgated under such section, and any comparable provision of any future legislation or regulation amending, supplementing or superseding such section or regulation.

(h) "Committee" means a committee of Directors or of other individuals satisfying Applicable Laws appointed by the Board in accordance with Section 4 hereof.

(i) "Common Stock" means the common stock of the Company.

(j) "Company" means Arcadia Biosciences, Inc., an Arizona corporation, or any successor thereto.

(k) "Director" means a member of the Board.

(l) "Disability" means total and permanent disability as defined in Section 22(e)(3) of the Code, provided that in the case of Awards other than Incentive Stock Options, the Administrator in its discretion may determine whether a permanent and total disability exists in accordance with uniform and non-discriminatory standards adopted by the Administrator from time to time.

(m) "Employee" means any person, including Officers and Directors, employed by the Company or any Parent or Subsidiary of the Company. Neither service as a Director nor payment of a director's fee by the Company will be sufficient to constitute "employment" by the Company.

(n) "Exchange Act" means the Securities Exchange Act of 1934, as amended.

(o) "Exchange Program" means a program established by the Committee under which outstanding Awards are amended to provide for a lower Exercise Price or surrendered or cancelled in exchange for (i) Awards with a lower exercise price, (ii) a different type of Award or awards under a different equity incentive plan, (iii) cash, or (iv) a combination of (i), (ii) and/or (iii). Notwithstanding the preceding, the term Exchange Program does not include any (i) action described in Section 13 or any action taken in connection with a change in control transaction nor (ii) transfer or other disposition permitted under Section 12. For the purpose of clarity, each of the actions described in the prior sentence, none of which constitute an Exchange Program, may be undertaken (or authorized) by the Committee in its sole discretion without approval by the Company's shareholders.

(p) "Fair Market Value" means, as of any date, the value of Common Stock determined as follows:

(i) If the Common Stock is listed on any established stock exchange or a national market system, including without limitation the New York Stock Exchange, the Nasdaq Global Select Market, the Nasdaq Global Market or the Nasdaq Capital Market of The Nasdaq Stock Market, its Fair Market Value will be the closing sales price for such stock (or the closing bid, if no sales were reported) as quoted on such exchange or system on the day of determination, as reported in *The Wall Street Journal* or such other source as the Administrator deems reliable;

(ii) If the Common Stock is regularly quoted by a recognized securities dealer but selling prices are not reported, the Fair Market Value of a Share will be the mean between the high bid and low asked prices for the Common Stock on the day of determination, as reported in *The Wall Street Journal* or such other source as the Administrator deems reliable;

(iii) For purposes of any Awards granted on the Registration Date, the Fair Market Value will be the initial price to the public as set forth in the final prospectus included within the registration statement in Form S-1 filed with the Securities and Exchange Commission for the initial public offering of the Company's Common Stock; or

(iv) In the absence of an established market for the Common Stock, the Fair Market Value will be determined in good faith by the Administrator.

(q) "Fiscal Year" means the fiscal year of the Company.

(r) "Incentive Stock Option" means an Option intended to qualify as an incentive stock option within the meaning of Section 422 of the Code and the regulations promulgated thereunder.

(s) "Independent Contractor" means any person, including an advisor, consultant or agent engaged by the Company or a Parent or Subsidiary to render services to such entity.

(t) "Inside Director" means a Director who is an Employee.

(u) "Nonstatutory Stock Option" means an Option that by its terms does not qualify or is not intended to qualify as an Incentive Stock Option.

(v) "Officer" means a person who is an officer of the Company within the meaning of Section 16 of the Exchange Act and the rules and regulations promulgated thereunder.

(w) "Option" means a stock option granted pursuant to the Plan.

(x) "Outside Director" means a Director who is not an Employee.

(y) "Parent" means any corporation (other than the Company) in an unbroken chain of corporations ending with the Company if each of the corporations other than the Company owns stock possessing fifty percent (50%) or more of the total combined voting power of all classes of stock in one of the other corporations in such chain. A corporation that attains the status of a Parent on a date after the adoption of the Plan shall be considered a Parent commencing as of such date.

(z) "Participant" means the holder of an outstanding Award.

(aa) "Performance Goal" means a performance goal established by the Committee pursuant to Section 10(c) of the Plan.

(bb) "Performance Share" means an Award denominated in Shares which may be earned in whole or in part upon attainment of Performance Goals or other vesting criteria as the Administrator may determine pursuant to Section 10.

(cc) "Performance Unit" means an Award which may be earned in whole or in part upon attainment of Performance Goals or other vesting criteria as the Administrator may determine

and which may be settled for cash, Shares or other securities or a combination of the foregoing pursuant to Section 10.

(dd) "Period of Restriction" means the period during which the transfer of Shares of Restricted Stock are subject to restrictions and therefore, the Shares are subject to a substantial risk of forfeiture. Such restrictions may be based on the passage of time, the achievement of target levels of performance, or the occurrence of other events as determined by the Administrator.

(ee) "Plan" means this 2015 Omnibus Equity Incentive Plan.

(ff) "Registration Date" means the effective date of the first registration statement that is filed by the Company and declared effective pursuant to Section 12(g) of the Exchange Act, with respect to any class of the Company's securities.

(gg) "Restricted Stock" means Shares issued pursuant to a Restricted Stock award under Section 7 of the Plan.

(hh) "Restricted Stock Unit" means a bookkeeping entry representing an amount equal to the Fair Market Value of one Share, granted pursuant to Section 8. Each Restricted Stock Unit represents an unfunded and unsecured obligation of the Company.

(ii) "Rule 16b-3" means Rule 16b-3 of the Exchange Act or any successor to Rule 16b-3, as in effect when discretion is being exercised with respect to the Plan.

(jj) "Section 16(b)" means Section 16(b) of the Exchange Act.

(kk) "Service Provider" means an Employee, Director or Independent Contractor.

(ll) "Share" means a share of the Common Stock, as adjusted in accordance with Section 13 of the Plan.

(mm) "Stock Appreciation Right" means an Award, granted alone or in connection with an Option, that pursuant to Section 9 is designated as a Stock Appreciation Right.

(nn) "Subsidiary" means any corporation (other than the Company) in an unbroken chain of corporations beginning with the Company if each of the corporations other than the last corporation in the unbroken chain owns stock possessing fifty percent (50%) or more of the total combined voting power of all classes of stock in one of the other corporations in such chain. A corporation that attains the status of a Subsidiary on a date after the adoption of the Plan shall be considered a Subsidiary commencing as of such date.

3. Stock Subject to the Plan.

(a) Stock Subject to the Plan. Subject to the provisions of Section 13 of the Plan, the maximum aggregate number of Shares that may be issued under the Plan is [7% of the estimated post-IPO shares outstanding] Shares plus (i) any Shares that, as of the Registration Date, have been reserved but not issued pursuant to any awards granted under the Company's 2006 Stock Plan (as Amended and Restated on May 4, 2012) (the "***Existing Plan***") and are not subject to any awards

granted thereunder, and (ii) any Shares subject to awards under the Existing Plan that otherwise would have been returned to the Existing Plan after the Registration Date on account of the expiration, cancellation or forfeiture of awards granted thereunder, with the maximum number of Shares to be added to the Plan pursuant to clauses (i) and (ii) equal to [NUMBER] Shares. The Shares may be authorized, but unissued, or reacquired Common Stock. Notwithstanding the foregoing and, subject to adjustment as provided in Section 13, the maximum number of Shares that may be issued upon the exercise of Incentive Stock Options will equal the aggregate Share number stated in this Section 3(a), plus, to the extent allowable under Section 422 of the Code and the Treasury Regulations promulgated thereunder, any Shares that become available for issuance under the Plan pursuant to Sections 3(b) and 3(c).

(b) Automatic Share Reserve Increase. The number of Shares available for issuance under the Plan will be increased on the first day of each Fiscal Year beginning with the 2016 Fiscal Year, in an amount equal to the least of (i) [NUMBER] Shares, (ii) four percent (4%) of the outstanding Shares on the last day of the immediately preceding Fiscal Year or (iii) such number of Shares determined by the Board.

(c) Lapsed Awards. To the extent an Award expires, is surrendered pursuant to an Exchange Program or becomes unexercisable without having been exercised or, with respect to Restricted Stock, Restricted Stock Units, Performance Units or Performance Shares, is forfeited to or repurchased by the Company due to failure to vest, the unpurchased Shares (or for Awards other than Options or Stock Appreciation Rights the forfeited or repurchased Shares), which were subject thereto will become available for future grant or sale under the Plan (unless the Plan has terminated). Notwithstanding the foregoing (and except with respect to Shares of Restricted Stock that are forfeited rather than vesting), Shares that have actually been issued under the Plan under any Award will not be returned to the Plan and will not become available for future distribution under the Plan; provided, however, that if Shares issued pursuant to Awards of Restricted Stock, Restricted Stock Units, Performance Shares or Performance Units are repurchased by the Company or are forfeited to the Company, such Shares will become available for future grant under the Plan. Shares used to pay the exercise price of an Award or to satisfy the tax withholding obligations related to an Award will become available for future grant or sale under the Plan. To the extent an Award under the Plan is paid out in cash rather than Shares, such cash payment will not result in reducing the number of Shares available for issuance under the Plan.

4. Administration of the Plan.

(a) Procedure.

(i) Multiple Administrative Bodies. Different Committees with respect to different groups of Service Providers may administer the Plan.

(ii) Section 162(m). To the extent that the Administrator determines it to be desirable to qualify Awards granted hereunder as "performance-based compensation" within the meaning of Section 162(m) of the Code, the Plan will be administered by a Committee of two (2) or more "outside directors" within the meaning of Section 162(m) of the Code.

(iii) Rule 16b-3. To the extent desirable to qualify transactions hereunder as exempt under Rule 16b-3, the transactions contemplated hereunder will be structured to satisfy the requirements for exemption under Rule 16b-3.

(iv) Other Administration. Other than as provided above, the Plan will be administered by (A) the Board or (B) a Committee, which committee will be constituted to satisfy Applicable Laws.

(b) Powers of the Administrator. Subject to the provisions of the Plan, the Administrator will have the authority, in its discretion:

(i) to determine the Fair Market Value;

(ii) to select the Service Providers to whom Awards may be granted hereunder;

(iii) to determine the number of Shares to be covered by each Award granted hereunder;

(iv) to approve forms of Award Agreements for use under the Plan;

(v) to determine the terms and conditions, not inconsistent with the terms of the Plan, of any Award granted hereunder. Such terms and conditions include, but are not limited to, the exercise price, the time or times when Awards may be exercised (which may be based on performance criteria), any vesting acceleration or waiver of forfeiture restrictions, and any restriction or limitation regarding any Award or the Shares relating thereto, based in each case on such factors as the Administrator will determine;

(vi) to construe and interpret the terms of the Plan and Awards granted pursuant to the Plan;

(vii) to prescribe, amend and rescind rules and regulations relating to the Plan, including rules and regulations established for the purpose of satisfying applicable foreign laws, for qualifying for favorable tax treatment under applicable foreign laws or facilitating compliance with foreign laws; sub-plans may be created for any of these purposes;

(viii) to modify or amend each Award (subject to Section 18 of the Plan), including but not limited to the discretionary authority to extend the post-termination exercisability period of Awards and to extend the maximum term of an Option (subject to Section 6(b) of the Plan regarding Incentive Stock Options);

(ix) to allow Participants to satisfy withholding tax obligations in such manner as prescribed in Section 14 of the Plan;

(x) to authorize any person to execute on behalf of the Company any instrument required to effect the grant of an Award previously granted by the Administrator;

(xi) to allow a Participant to defer the receipt of the payment of cash or the delivery of Shares that would otherwise be due to such Participant under an Award; and

(xii) to make all other determinations deemed necessary or advisable for administering the Plan.

(c) Effect of Administrator's Decision. The Administrator's decisions, determinations and interpretations will be final and binding on all Participants and any other holders of Awards.

(d) Exchange Program. Notwithstanding the anything in this Section 4, the Committee shall not implement an Exchange Program without the approval of the holders of a majority of the Shares that are present in person or by proxy and entitled to vote at any annual or special meeting of Company's shareholders.

(e) Delegation by the Committee. The Committee, in its sole discretion and on such terms and conditions as it may provide, may delegate all or any part of its authority and powers under the Plan to one or more Directors or officers of the Company; provided, however, that the Committee may not delegate its authority and powers (a) with respect to an Officer or (b) in any way which would jeopardize the Plan's qualification under Code Section 162(m) or Rule 16b-3.

5. Award Eligibility and Limitations.

(a) Award Eligibility. Nonstatutory Stock Options, Stock Appreciation Rights, Restricted Stock, Restricted Stock Units, Performance Shares and Performance Units may be granted to Service Providers. Incentive Stock Options may be granted only to Employees.

(b) Award Limitations. The following limits shall apply to the grant of any Award if, at the time of grant, the Company is a "publicly held corporation" within the meaning of Section 162(m) of the Code:

(i) Options and Stock Appreciation Rights. Subject to adjustment as provided in Section 13, no Employee shall be granted within any fiscal year of the Company one or more Options or Stock Appreciation Rights, which in the aggregate cover more than [1,500,000] Shares reserved for issuance under the Plan; provided, however, that in connection with an Employee's initial service as an Employee, an Employee may be granted Options or Stock Appreciation Rights, which in the aggregate cover up to an additional [1,500,000] Shares reserved for issuance under the Plan.

(ii) Restricted Stock and Restricted Stock Units. Subject to adjustment as provided in Section 13, no Employee shall be granted within any fiscal year of the Company one or more awards of Restricted Stock or Restricted Stock Units, which in the aggregate cover more than [1,500,000] Shares reserved for issuance under the Plan; provided, however, that in connection with an Employee's initial service as an Employee, an Employee may be granted Restricted Stock or Restricted Stock Units s, which in the aggregate cover up to an additional [1,500,000] Shares reserved for issuance under the Plan.

(iii) Performance Units and Performance Shares. Subject to adjustment as provided in Section 13, no Employee shall receive Performance Units or Performance Shares having a grant date value (assuming maximum payout) greater than [five million] dollars ($[5] million) or covering more than [1,500,000] Shares, whichever is greater; provided, however, that in connection with an Employee's initial service as an Employee, an Employee may receive Performance Units or Performance Shares having a grant date value (assuming maximum payout) of up to an additional amount equal [five million] dollars ($[5] million) or covering up to [1,500,000] Shares, whichever is greater. No Participant may be granted more than one award of Performance Units or Performance Shares for the same Performance Period.

6. Stock Options.

(a) Limitations. Each Option will be designated in the Award Agreement as either an Incentive Stock Option or a Nonstatutory Stock Option. However, notwithstanding such designation, to the extent that the aggregate Fair Market Value of the Shares with respect to which Incentive Stock Options are exercisable for the first time by the Participant during any calendar year (under all plans of the Company and any Parent or Subsidiary) exceeds one hundred thousand dollars ($100,000), such Options will be treated as Nonstatutory Stock Options. For purposes of this Section 6(a), Incentive Stock Options will be taken into account in the order in which they were granted. The Fair Market Value of the Shares will be determined as of the time the Option with respect to such Shares is granted. With respect to the Committee's authority in Section 4(b)(viii), if, at the time of any such extension, the exercise price per Share of the Option is less than the Fair Market Value of a Share, the extension shall, unless otherwise determined by the Committee, be limited to the earlier of (1) the maximum term of the Option as set by its original terms, or (2) ten (10) years from the grant date. Unless otherwise determined by the Committee, any extension of the term of an Option pursuant to this Section 4(b)(viii) shall comply with Code Section 409A to the extent necessary to avoid taxation thereunder.

(b) Term of Option. The term of each Option will be stated in the Award Agreement. In the case of an Incentive Stock Option, the term will be ten (10) years from the date of grant or such shorter term as may be provided in the Award Agreement. Moreover, in the case of an Incentive Stock Option granted to a Participant who, at the time the Incentive Stock Option is granted, owns stock representing more than ten percent (10%) of the total combined voting power of all classes of stock of the Company or any Parent or Subsidiary, the term of the Incentive Stock Option will be five (5) years from the date of grant or such shorter term as may be provided in the Award Agreement.

(c) Option Exercise Price and Consideration.

(i) Exercise Price. The per share exercise price for the Shares to be issued pursuant to exercise of an Option will be determined by the Administrator, subject to the following:

(1) In the case of an Incentive Stock Option

(A) granted to an Employee who, at the time the Incentive Stock Option is granted, owns stock representing more than ten percent (10%) of the voting power of all classes of stock of the Company or any Parent or Subsidiary, the per Share exercise price will

be no less than one hundred ten percent (110%) of the Fair Market Value per Share on the date of grant.

(B) granted to any Employee other than an Employee described in paragraph (A) immediately above, the per Share exercise price will be no less than one hundred percent (100%) of the Fair Market Value per Share on the date of grant.

(2) In the case of a Nonstatutory Stock Option, the per Share exercise price will be no less than one hundred percent (100%) of the Fair Market Value per Share on the date of grant.

(3) Notwithstanding the foregoing, Options may be granted with a per Share exercise price of less than one hundred percent (100%) of the Fair Market Value per Share on the date of grant pursuant to a transaction described in, and in a manner consistent with, Section 424(a) of the Code.

(ii) Waiting Period and Exercise Dates. At the time an Option is granted, the Administrator will fix the period within which the Option may be exercised and will determine any conditions that must be satisfied before the Option may be exercised.

(iii) Form of Consideration. The Administrator will determine the acceptable form of consideration for exercising an Option, including the method of payment. In the case of an Incentive Stock Option, the Administrator will determine the acceptable form of consideration at the time of grant. Such consideration for both types of Options may consist entirely of: (1) cash; (2) check; (3) promissory note, to the extent permitted by Applicable Laws, (4) other Shares, provided that such Shares have a Fair Market Value on the date of surrender equal to the aggregate exercise price of the Shares as to which such Option will be exercised and provided that accepting such Shares will not result in any adverse accounting consequences to the Company, as the Administrator determines in its sole discretion; (5) consideration received by the Company under a broker-assisted (or other) cashless exercise program (whether through a

broker or otherwise) implemented by the Company in connection with the Plan; (6) by net exercise; (7) such other consideration and method of payment for the issuance of Shares to the extent permitted by Applicable Laws; or (8) any combination of the foregoing methods of payment.

(d) Exercise of Option.

(i) Procedure for Exercise; Rights as a Stockholder. Any Option granted hereunder will be exercisable according to the terms of the Plan and at such times and under such conditions as determined by the Administrator and set forth in the Award Agreement. An Option may not be exercised for a fraction of a Share.

An Option will be deemed exercised when the Company receives: (i) a notice of exercise (in such form as the Administrator may specify from time to time) from the person entitled to exercise the Option, and (ii) full payment for the Shares with respect to which the Option is exercised (together with applicable withholding taxes). Full payment may consist of any consideration and method of payment authorized by the Administrator and permitted by the Award Agreement and the Plan. Shares issued upon exercise of an Option will be issued in the name of the Participant or, if requested by the Participant, in the name of the Participant and his or her spouse.

Until the Shares are issued (as evidenced by the appropriate entry on the books of the Company or of a duly authorized transfer agent of the Company), no right to vote or receive dividends or any other rights as a stockholder will exist with respect to the Shares subject to an Option, notwithstanding the exercise of the Option. The Company will issue (or cause to be issued) such Shares promptly after the Option is exercised. No adjustment will be made for a dividend or other right for which the record date is prior to the date the Shares are issued, except as provided in Section 13 of the Plan.

(ii) Termination of Relationship as a Service Provider. If a Participant ceases to be a Service Provider, other than upon the Participant's termination as the result of the Participant's death or Disability, the Participant may exercise his or her Option within such period of time as is specified in the Award Agreement to the extent that the Option is vested on the date of termination (but in no event later than the expiration of the term of such Option as set forth in the Award Agreement). In the absence of a specified time in the Award Agreement, the Option will remain exercisable for three (3) months following the Participant's termination. Unless otherwise provided by the Administrator, if on the date of termination the Participant is not vested as to his or her entire Option, the Shares covered by the unvested portion of the Option will revert to the Plan. If after termination the Participant does not exercise his or her Option within the time specified by the Administrator, the Option will terminate, and the Shares covered by such Option will revert to the Plan.

(iii) Disability of Participant. If a Participant ceases to be a Service Provider as a result of the Participant's Disability, the Participant may exercise his or her Option within such period of time as is specified in the Award Agreement to the extent the Option is vested on the date of termination (but in no event later than the expiration of the term of such Option as set forth in the Award Agreement). In the absence of a specified time in the Award Agreement, the Option will remain exercisable for twelve (12) months following the Participant's termination. Unless otherwise provided by the Administrator, if on the date of termination the Participant is not vested as to his or her entire Option, the Shares covered by the unvested portion of the Option will revert to the Plan. If after termination the Participant does not exercise his or her Option within the time specified herein, the Option will terminate, and the Shares covered by such Option will revert to the Plan.

(iv) Death of Participant. If a Participant dies while a Service Provider, the Option may be exercised following the Participant's death within such period of time as is specified in the Award Agreement to the extent that the Option is vested on the date of death (but in no event may the Option be exercised later than the expiration of the term of such Option as set forth in the Award Agreement), by the Participant's designated beneficiary, provided such beneficiary has been designated prior to Participant's death in a form acceptable to the Administrator. If no such beneficiary has been designated by the Participant, then such Option may be exercised by the personal representative of the Participant's estate or by the person(s) to whom the Option is transferred pursuant to the Participant's will or in accordance with the laws of descent and distribution. In the absence of a specified time in the Award Agreement, the Option will remain exercisable for twelve (12) months following Participant's death. Unless otherwise provided by the Administrator, if at the time of death Participant is not vested as to his or her entire Option, the Shares covered by the unvested portion of the Option will immediately revert to the Plan. If the Option is not so exercised within the time specified herein, the Option will terminate, and the Shares covered by such Option will revert to the Plan.

7. Restricted Stock.

(a) Grant of Restricted Stock. Subject to the terms and provisions of the Plan, the Administrator, at any time and from time to time, may grant Shares of Restricted Stock to Service Providers in such amounts as the Administrator, in its sole discretion, will determine.

(b) Restricted Stock Agreement. Each Award of Restricted Stock will be evidenced by an Award Agreement that will specify the Period of Restriction, the number of Shares granted, and such other terms and conditions as the Administrator, in its sole discretion, will determine. Unless the Administrator determines otherwise, the Company as escrow agent will hold Shares of Restricted Stock until the restrictions on such Shares have lapsed.

(c) Transferability. Except as provided in this Section 7 or the Award Agreement, Shares of Restricted Stock may not be sold, transferred, pledged, assigned, or otherwise alienated or hypothecated until the end of the applicable Period of Restriction.

(d) Other Restrictions. The Administrator, in its sole discretion, may impose such other restrictions on Shares of Restricted Stock as it may deem advisable or appropriate.

(e) Removal of Restrictions. Except as otherwise provided in this Section 7, Shares of Restricted Stock covered by each Restricted Stock grant made under the Plan will be released from escrow as soon as practicable after the last day of the Period of Restriction or at such other time as the Administrator may determine. The Administrator, in its discretion, may accelerate the time at which any restrictions will lapse or be removed.

(f) Voting Rights. During the Period of Restriction, Service Providers holding Shares of Restricted Stock granted hereunder may exercise full voting rights with respect to those Shares, unless the Administrator determines otherwise.

(g) Dividends and Other Distributions. During the Period of Restriction, Service Providers holding Shares of Restricted Stock will be entitled to receive all dividends and other distributions paid with respect to such Shares, unless the Administrator provides otherwise. If any such dividends or

distributions are paid in Shares, the Shares will be subject to the same restrictions on transferability and forfeitability as the Shares of Restricted Stock with respect to which they were paid.

(h) Return of Restricted Stock to Company. On the date set forth in the Award Agreement, the Restricted Stock for which restrictions have not lapsed will revert to the Company and again will become available for grant under the Plan.

8. Restricted Stock Units.

(a) Grant. Restricted Stock Units may be granted at any time and from time to time as determined by the Administrator. After the Administrator determines that it will grant Restricted Stock Units under the Plan, it will advise the Participant in an Award Agreement of the terms, conditions, and restrictions (if any) related to the grant, including the number of Restricted Stock Units.

(b) Vesting Criteria and Other Terms. The Administrator will set vesting criteria in its discretion, which, depending on the extent to which the criteria are met, will determine the number of Restricted Stock Units that will be paid out to the Participant. The Administrator may set vesting criteria based upon the achievement of Company-wide, business unit, or individual goals (including, but not limited to, continued employment), or any other basis (including the passage of time) determined by the Administrator in its discretion.

(c) Earning Restricted Stock Units. Upon meeting the applicable vesting criteria, the Participant will be entitled to receive a payout as determined by the Administrator. Notwithstanding the foregoing, at any time after the grant of Restricted Stock Units, the Administrator, in its sole discretion, may reduce or waive any vesting criteria that must be met to receive a payout.

(d) Dividend Equivalents. The Administrator may, in its sole discretion, award dividend equivalents in connection with the grant of Restricted Stock Units that may be settled in cash, in Shares of equivalent value, or in some combination thereof.

(e) Form and Timing of Payment. Payment of earned Restricted Stock Units will be made upon the date(s) determined by the Administrator and set forth in the Award Agreement. The Administrator, in its sole discretion, may only settle earned Restricted Stock Units in cash, Shares, or a combination of both.

(f) Cancellation. On the date set forth in the Award Agreement, all unearned Restricted Stock Units will be forfeited to the Company.

9. Stock Appreciation Rights.

(a) Grant of Stock Appreciation Rights. Subject to the terms and conditions of the Plan, a Stock Appreciation Right may be granted to Service Providers at any time and from time to time as will be determined by the Administrator, in its sole discretion.

(b) Number of Shares. The Administrator will have complete discretion to determine the number of Stock Appreciation Rights granted to any Service Provider.

(c) Exercise Price and Other Terms. The per share exercise price for the Shares to be issued pursuant to exercise of a Stock Appreciation Right will be determined by the Administrator and will be no less than one hundred percent (100%) of the Fair Market Value per Share on the date of grant. Otherwise, the Administrator, subject to the provisions of the Plan, will have complete discretion to determine the terms and conditions of Stock Appreciation Rights granted under the Plan.

(d) Stock Appreciation Right Agreement. Each Stock Appreciation Right grant will be evidenced by an Award Agreement that will specify the exercise price, the term of the Stock Appreciation Right, the conditions of exercise, and such other terms and conditions as the Administrator, in its sole discretion, will determine.

(e) Expiration of Stock Appreciation Rights. A Stock Appreciation Right granted under the Plan will expire upon the date determined by the Administrator, in its sole discretion, and set forth in the Award Agreement. Notwithstanding the foregoing, the rules of Section 6(b) relating to the maximum term and Section 6(d) relating to exercise also will apply to Stock Appreciation Rights.

(f) Payment of Stock Appreciation Right Amount. Upon exercise of a Stock Appreciation Right, a Participant will be entitled to receive payment from the Company in an amount determined by multiplying:

(i) The difference between the Fair Market Value of a Share on the date of exercise over the exercise price; times

(ii) The number of Shares with respect to which the Stock Appreciation Right is exercised.

At the discretion of the Administrator, the payment upon Stock Appreciation Right exercise may be in cash, in Shares of equivalent value, or in some combination thereof.

10. Performance Units and Performance Shares.

(a) Grant of Performance Units/Shares. Performance Units and Performance Shares may be granted to Service Providers at any time and from time to time, as will be determined by the Administrator, in its sole discretion. The Administrator will have complete discretion in determining the number of Performance Units and Performance Shares granted to each Participant.

(b) Value of Performance Units/Shares. Each Performance Unit will have an initial value that is established by the Administrator on or before the date of grant. Each Performance Share will have an initial value equal to the Fair Market Value of a Share on the date of grant.

(c) Performance Objectives and Other Terms. The Administrator will set Performance Goals or other vesting provisions (including, without limitation, continued status as a Service Provider) in its discretion which, depending on the extent to which they are met, will determine the number or value of Performance Units/Shares that will be paid out to the Service Providers. The time period during which the performance objectives or other vesting provisions must be met will be called the "Performance Period." Each Award of Performance Units/Shares will be evidenced by an Award Agreement that will specify the Performance Period, and such other terms and conditions as the Administrator, in its sole discretion, will determine. The Administrator may set performance objectives based upon the achievement of Company-wide, divisional, or individual goals, applicable federal or state securities laws, or any other basis determined by the Administrator in its discretion.

(d) Measurement of Performance Goals. Performance Goals shall be established by the Committee on the basis of targets to be attained ("***Performance Targets***") with respect to one or more measures of business or financial performance (each, a "***Performance Measure***"), subject to the following:

(i) Performance Measures. For each Performance Period, the Committee shall establish and set forth in writing the Performance Measures, if any, and any particulars, components and adjustments relating thereto, applicable to each Participant. The Performance Measures, if any, will be objectively measurable and will be based upon the achievement of a specified percentage or level in one or more objectively defined and non-discretionary factors preestablished by the Committee. Performance Measures may be one or more of the following, as determined by the Committee: (1) sales or non-sales revenue; (2) return on revenues; (3) operating income; (4) income or earnings including operating income; (5) income or earnings before or after taxes, interest, depreciation and/or amortization; (6) income or earnings from continuing operations; (7) net income; (8) pre-tax income or after-tax income; (9) net income excluding amortization of intangible assets, depreciation and impairment of goodwill and intangible assets and/or excluding charges attributable to the adoption of new accounting pronouncements; (10) raising of financing or fundraising; (11) project financing; (12) revenue backlog; (13) gross margin; (14) operating margin or profit margin; (15) capital expenditures, cost targets, reductions and savings and expense management; (16) return on assets (gross or net), return on investment, return on capital, or return on shareholder equity; (17) cash flow, free cash flow, cash flow return on investment (discounted or otherwise), net cash provided by operations, or cash flow in excess of cost of capital; (18) performance warranty and/or guarantee claims; (19) stock price or total stockholder return; (20) earnings or book value per share (basic or diluted); (21) economic value created; (22) pre-tax profit or after-tax profit; (23) strategic business criteria, consisting of one or more objectives based on meeting specified market penetration or market share, completion of strategic agreements such as licenses, funded collaborations, joint ventures, acquisitions, and the like, geographic business expansion, objective customer satisfaction or information technology goals, intellectual property asset metrics; (24) objective goals relating to divestitures, joint ventures, mergers, acquisitions and similar transactions; (25) objective goals relating to staff management, results from staff attitude and/or opinion surveys, staff satisfaction scores, staff safety, staff accident and/or injury rates, compliance, headcount, performance management, completion of critical staff training initiatives; (26) objective goals relating to projects, including project completion, timing and/or achievement of milestones, project budget, technical progress against work plans; (27) key regulatory objectives or milestones; and (28) enterprise resource planning. Awards issued to Participants who are not subject to the limitations of Code Section 162(m) or Awards to Participants that are not intended to comply with the requirements of Code Section 162(m) may, in either case, take into account other factors (including subjective factors). Performance Goals may differ from Participant to Participant, Performance Period to Performance Period and from Award to Award. Any criteria used may be measured, as applicable, (1) in absolute terms, (2) in relative terms (including, but not limited to, any increase (or decrease) over the passage of time and/or any measurement against other companies or financial or business or stock index metrics particular to the Company), (3) on a per share and/or share per capita basis, (4) against the performance of the Company as a whole or against any affiliate(s), or a particular segment(s), a business unit(s) or a product(s) of the Company or individual project company, (5) on a pre-tax or after-tax basis, and/or (6) using an actual foreign exchange rate or on a foreign exchange neutral basis.

(ii) Committee Discretion on Performance Measures. As determined in the discretion of the Committee, the Performance Measures for any Performance Period may (a) differ from Participant to Participant and from Award to Award, (b) be based on the performance of the Company as a whole or the performance of a specific Participant or one or more subsidiaries, divisions, departments, regions, stores, segments, products, functions or business units of the Company or individual project company, (c) be measured on a per share, per capita, per unit, per square foot, per employee, per store basis, and/or other objective basis (d) be measured on a pre-tax or after-tax basis, and (e) be measured on an absolute basis or in relative terms (including, but not limited to, the passage of time and/or against other companies, financial metrics and/or an index). Without limiting the foregoing, the Committee shall adjust any performance criteria, Performance Measures or other feature of an Award that relates to or is wholly or partially based on the number of, or the value of, any stock of the Company, to reflect any stock dividend or split, repurchase, recapitalization, combination, or exchange of shares or other similar changes in such stock. Awards that are not intended by the Company to comply with the performance-based compensation exception under Code Section 162(m) may take into account other factors (including subjective factors).

(e) Earning of Performance Units/Shares. After the applicable Performance Period has ended, the holder of Performance Units/Shares will be entitled to receive a payout of the number of Performance Units/Shares earned by the Participant over the Performance Period, to be determined as a function of the extent to which the corresponding Performance Goals or other vesting provisions have been achieved. After the grant of a Performance Unit/Share, the Administrator, in its sole discretion, may reduce or waive any Performance Goals or other vesting provisions for such Performance Unit/Share.

(f) Form and Timing of Payment of Performance Units/Shares. Payment of earned Performance Units/Shares will be made upon the time set forth in the applicable Award Agreement. The Administrator, in its sole discretion, may pay earned Performance Units/Shares in the form of cash, in Shares (which have an aggregate Fair Market Value equal to the value of the earned Performance Units/Shares at the close of the applicable Performance Period) or in a combination thereof.

(g) Cancellation of Performance Units/Shares. On the date set forth in the Award Agreement, all unearned or unvested Performance Units/Shares will be forfeited to the Company, and again will be available for grant under the Plan.

11. Leaves of Absence/Transfer Between Locations. Unless the Administrator provides otherwise, vesting of Awards granted hereunder will be suspended during any unpaid leave of absence unless contrary to Applicable Law. A Participant will not cease to be an Employee in the case of (i) any leave of absence approved by the Participant's employer or (ii) transfers between locations of the Company or between the Company, its Parent, or any Subsidiary. For purposes of Incentive Stock Options, no such leave may exceed three (3) months, unless reemployment upon expiration of such leave is guaranteed by statute or contract. If reemployment upon expiration of a leave of absence approved by the Participant's employer is not so guaranteed, then six (6) months following the first (1st) day of such leave any Incentive Stock Option held by the Participant will cease to be treated as an Incentive Stock Option and will be treated for tax purposes as a Nonstatutory Stock Option.

12. Transferability of Awards. Unless determined otherwise by the Administrator, an Award may not be sold, pledged, assigned, hypothecated, transferred, or disposed of in any manner other than by will or by the laws of descent or distribution and may be exercised, during the lifetime of the Participant, only by the Participant. If the Administrator makes an Award transferable, such Award will contain such additional terms and conditions as the Administrator deems appropriate.

13. Adjustments; Dissolution or Liquidation; Merger or Change in Control.

(a) Adjustments. In the event of a stock split, reverse stock split, stock dividend, combination, consolidation, recapitalization (including a recapitalization through a large nonrecurring cash dividend) or reclassification of the Shares, subdivision of the Shares, a rights offering, a reorganization, merger, spin-off, split-up, repurchase, or exchange of Common Stock or other securities of the Company or other significant corporate transaction, or other change affecting the Common Stock occurs, the Administrator, in order to prevent dilution or enlargement of the benefits or potential benefits intended to be made available under the Plan, will, in such manner as it may deem equitable, adjust the number, kind and class of securities that may be delivered under the Plan and/or the number, class, kind and price of securities covered by each outstanding Award, the numerical Share limits in Section 3 of the Plan. Notwithstanding the forgoing, all adjustments under this Section 13 shall be made in a manner that does not result in taxation under Code Section 409A.

(b) Dissolution or Liquidation. In the event of the proposed winding up, dissolution or liquidation of the Company, the Administrator will notify each Participant as soon as practicable prior to the effective date of such proposed transaction. To the extent it has not been previously exercised, an Award will terminate immediately prior to the consummation of such proposed action.

(c) Change in Control. In the event of a merger or Change in Control, each outstanding Award will be treated as the Administrator determines, including, without limitation, that each Award be assumed, cancelled or an equivalent option or right substituted by the successor corporation or a Parent or Subsidiary of the successor corporation. The Administrator will not be required to treat all Awards similarly in the transaction.

Except as set forth in an Award Agreement, in the event that the successor corporation does not assume or substitute for the Award, the Participant will fully vest in and have the right to exercise all of his or her outstanding Options and Stock Appreciation Rights, including Shares as to which such Awards would not otherwise be vested or exercisable, all restrictions on Restricted Stock and Restricted Stock Units will lapse, and, with respect to Awards with performance-based vesting, all Performance Goals or other vesting criteria will be deemed achieved at one hundred percent (100%) of target levels and all other terms and conditions met. In addition, if an Option or Stock Appreciation Right is not assumed or substituted in the event of a Change in Control, the Administrator will notify the Participant in writing or electronically that the Option or Stock Appreciation Right will be exercisable for a period of time determined by the Administrator in its sole discretion, and the Option or Stock Appreciation Right will terminate upon the expiration of such period.

For the purposes of this subsection (c), an Award will be considered assumed if, following the Change in Control, the Award confers the right to purchase or receive, for each Share

subject to the Award immediately prior to the Change in Control, the consideration (whether stock, cash, or other securities or property) received in the Change in Control by holders of Common Stock for each Share held on the effective date of the transaction (and if holders were offered a choice of consideration, the type of consideration chosen by the holders of a majority of the outstanding Shares); provided, however, that if such consideration received in the Change in Control is not solely common stock of the successor corporation or its Parent, the Administrator may, with the consent of the successor corporation, provide for the consideration to be received upon the exercise of an Option or Stock Appreciation Right or upon the payout of a Restricted Stock Unit, Performance Unit or Performance Share, for each Share subject to such Award, to be solely common stock of the successor corporation or its Parent equal in fair market value to the per share consideration received by holders of Common Stock in the Change in Control.

Notwithstanding anything in this Section 13(c) to the contrary, an Award that vests, is earned or paid-out upon the satisfaction of one or more Performance Goals will not be considered assumed if the Company or its successor modifies any of such Performance Goals without the Participant's consent; provided, however, a modification to such Performance Goals only to reflect the successor corporation's post-Change in Control corporate structure will not be deemed to invalidate an otherwise valid Award assumption.

14. Tax.

(a) Withholding Requirements. Prior to the delivery of any Shares or cash pursuant to an Award (or exercise thereof) or prior to any time the Award or Shares are subject to taxation, the Company and/or the Participant's employer will have the power and the right to deduct or withhold, or require a Participant to remit to the Company, an amount sufficient to satisfy federal, state, local, foreign or other taxes (including the Participant's FICA obligation or social insurance contributions) required to be withheld with respect to such Award (or exercise thereof).

(b) Withholding Arrangements. The Administrator, in its sole discretion and pursuant to such procedures as it may specify from time to time, may permit a Participant to satisfy such tax withholding obligation, in whole or in part by (without limitation) (a) paying cash, (b) electing to have the Company withhold otherwise deliverable cash or Shares having a Fair Market Value equal to the minimum statutory amount required to be withheld (to the extent required to avoid adverse accounting consequences), or (c) delivering to the Company already-owned Shares having a Fair Market Value equal to the minimum statutory amount required to be withheld to the extent required to avoid adverse accounting consequences or Shares having a Fair Market Value in excess of such amount that have been held for such period required to avoid adverse accounting consequences. Except as otherwise determined by the Administrator, the Fair Market Value of the Shares to be withheld or delivered will be determined as of the date that the taxes are required to be withheld.

(c) Compliance With Code Section 409A. Awards will be designed and operated in such a manner that they are either exempt from the application of, or comply with, the requirements of Code Section 409A such that the grant, payment, settlement or deferral will not be subject to the additional tax or interest applicable under Code Section 409A. The Plan and each Award Agreement under the Plan is intended to meet the requirements of Code Section 409A (or an exemption therefrom) and will be construed and interpreted in accordance with such intent, except as

otherwise determined in the sole discretion of the Administrator. To the extent that an Award or payment, or the settlement or deferral thereof, is subject to Code Section 409A the Award will be granted, paid, settled or deferred in a manner that will meet the requirements of Code Section 409A (or an exemption therefrom), such that the grant, payment, settlement or deferral will not be subject to the additional tax or interest applicable under Code Section 409A. In no event will the Company be responsible for or reimburse a Participant for any taxes or other penalties incurred as a result of applicable of Code Section 409A.

15. No Effect on Employment or Service. Neither the Plan nor any Award will confer upon a Participant any right with respect to continuing the Participant's relationship as a Service Provider with the Company, or (if different) the Participant's employer, nor will they interfere in any way with the Participant's right or the Participant's employer's right to terminate such relationship at any time, with or without cause, to the extent permitted by Applicable Laws.

16. Date of Grant. The date of grant of an Award will be, for all purposes, the date on which the Administrator makes the determination granting such Award, or such other later date as is determined by the Administrator. Notice of the determination will be provided to each Participant within a reasonable time after the date of such grant.

17. Term of Plan. Subject to Section 21 of the Plan, the Plan will become effective upon the earlier of its adoption by the Board or the Company's shareholders. It will continue in effect for a term of ten (10) years from such effective date, unless terminated earlier under Section 18 of the Plan.

18. Amendment and Termination of the Plan.

(a) Amendment and Termination. The Committee may at any time amend, alter, suspend or terminate the Plan.

(b) Stockholder Approval. The Company will obtain stockholder approval of any Plan amendment to the extent necessary and desirable to comply with Applicable Laws.

(c) Effect of Amendment or Termination. No amendment, alteration, suspension or termination of the Plan will impair the rights of any Participant, unless mutually agreed otherwise between the Participant and the Administrator, which agreement must be in writing and signed by the Participant and the Company. Termination of the Plan will not affect the Administrator's ability to exercise the powers granted to it hereunder with respect to Awards granted under the Plan prior to the date of such termination.

19. Conditions Upon Issuance of Shares.

(a) Legal Compliance. Shares will not be issued pursuant to the exercise of an Award unless the exercise of such Award and the issuance and delivery of such Shares will comply with Applicable Laws and will be further subject to the approval of counsel for the Company with respect to such compliance.

(b) Investment Representations. As a condition to the exercise of an Award, the Company may require the person exercising such Award to represent and warrant at the time of any

such exercise that the Shares are being purchased only for investment and without any present intention to sell or distribute such Shares if, in the opinion of counsel for the Company, such a representation is required.

20. Inability to Obtain Authority. The inability of the Company to obtain authority from any regulatory body having jurisdiction, which authority is deemed by the Company's counsel to be necessary to the lawful issuance and sale of any Shares hereunder, will relieve the Company of any liability in respect of the failure to issue or sell such Shares as to which such requisite authority will not have been obtained.

21. Stockholder Approval. The Plan will be subject to approval by the stockholders of the Company within twelve (12) months after the date the Plan is adopted by the Board. Such stockholder approval will be obtained in the manner and to the degree required under Applicable Laws.

22. Governing Law. The Plan and all Awards hereunder shall be construed in accordance with and governed by the laws of the State of Deleware, but without regard to its conflict of law provisions.

ARCADIA BIOSCIENCES, INC.

2015 OMNIBUS EQUITY INCENTIVE PLAN

STOCK OPTION AWARD AGREEMENT

Unless otherwise defined herein, the terms defined in the Arcadia Biosciences, Inc. 2015 Omnibus Equity Incentive Plan (the "***Plan***") will have the same defined meanings in this Stock Option Award Agreement (the "***Award Agreement***").

I. NOTICE OF STOCK OPTION GRANT

Participant Name:

Address:

You have been granted an Option to purchase Common Stock of Arcadia Biosciences, Inc. (the "***Company***"), subject to the terms and conditions of the Plan and this Award Agreement, as follows:

Grant Number _____

Date of Grant _____

Vesting Commencement Date _____

Exercise Price per Share $ _____

Total Number of Options Granted _____

Type of Option: _____ U.S. Incentive Stock Option

U.S. Nonstatutory Stock Option

Term/Expiration Date: _____

Vesting Schedule:

Subject to Section 2 of the Award Agreement and any acceleration provisions contained in the Plan or set forth below, this Option may be exercised, in whole or in part, in accordance with the following schedule:

[insert vesting schedule]

Termination Period:

This Option will be exercisable for three (3) months after Participant ceases (as defined in Section 2 of the Award Agreement) to be a Service Provider, unless such termination is due to Participant's death or Disability, in which case this Option will be exercisable for twelve (12) months after Participant ceases to be a Service Provider. Notwithstanding the foregoing, in no event may this Option be exercised after the Term/Expiration Date as provided above and may be subject to earlier termination as provided in Section 13 of the Plan.

By Participant's signature and the signature of the Company's representative below, Participant and the Company agree that this Option is granted under and governed by the terms and conditions of the Plan and this Award Agreement, including the Terms and Conditions of Stock Option Grant (including any country-specific addendum thereto), attached hereto as Exhibit A, all of which are made a part of this document. Participant has reviewed the Plan and this Award Agreement in their entirety, has had an opportunity to obtain the advice of counsel prior to executing this Award Agreement and fully understands all provisions of the Plan and Award Agreement. Participant hereby agrees to accept as binding, conclusive and final all decisions or interpretations of the Administrator upon any questions relating to the Plan and Award Agreement. Participant further agrees to promptly notify the Company in writing upon any change in the residence address indicated below.

PARTICIPANT:	ARCADIA BIOSCIENCES, INC.
_____	_____
Signature	By
_____	_____
Print Name	Title

Residence Address:

_____

_____

EXHIBIT A

TERMS AND CONDITIONS OF STOCK OPTION GRANT

1. Grant of Option. The Company hereby grants to the Participant named in the Notice of Grant attached as Part I of this Award Agreement (the "***Participant***") an option (the "***Option***") to purchase the number of Shares, as set forth in the Notice of Grant, at the exercise price per Share set forth in the Notice of Grant (the "***Exercise Price***"), subject to all of the terms and conditions in this Award Agreement and the Plan, which is incorporated herein by reference. Subject to Section 13 of the Plan, in the event of a conflict between the terms and conditions of the Plan and the terms and conditions of this Award Agreement, the terms and conditions of the Plan will prevail.

If designated in the Notice of Grant as an Incentive Stock Option ("***ISO***"), this Option is intended to qualify as an ISO under Section 422 of the U.S. Internal Revenue Code of 1986, as amended (the "***Code***"). However, if this Option is intended to be an ISO, to the extent that it exceeds the $100,000 rule of Code Section 422(d) it will be treated as a Nonstatutory Stock Option ("***NSO***"). Further, if for any reason this Option (or portion thereof) will not qualify as an ISO, then, to the extent of such nonqualification, such Option (or portion thereof) shall be regarded as a NSO granted under the Plan. In no event will the Administrator, the Company or any Parent or Subsidiary or any of their respective employees or directors have any liability to Participant (or any other person) due to the failure of the Option to qualify for any reason as an ISO.

2. Vesting Schedule. Except as provided in Section 3, the Option awarded by this Award Agreement will vest in accordance with the vesting provisions set forth in the Notice of Grant. Shares scheduled to vest on a certain date or upon the occurrence of a certain condition will not vest in Participant in

accordance with any of the provisions of this Award Agreement, unless Participant will have been continuously a Service Provider from the Date of Grant until the date such vesting occurs. Service Provider status will end on the day that notice of termination is provided whether oral or written (whether by the Company or Parent or Subsidiary for any reason or by Participant upon resignation) and will not be extended by any notice period that may be required contractually or under applicable local law. Notwithstanding the foregoing, the Administrator (or any delegate) shall have the sole and absolute discretion to determine when Participant is no longer providing active service for purposes of Service Provider status and participation in the Plan.

3. Administrator Discretion. The Administrator, in its discretion, may accelerate the vesting of the balance, or some lesser portion of the balance, of the unvested Option at any time, subject to the terms of the Plan. If so accelerated, such Option will be considered as having vested as of the date specified by the Administrator.

4. Exercise of Option.

(a) Right to Exercise. This Option may be exercised only within the term set out in the Notice of Grant, and may be exercised during such term only in accordance with the Plan and the terms of this Award Agreement.

(b) Method of Exercise. This Option is exercisable by delivery of an exercise notice, in the form attached as Exhibit B (the "***Exercise Notice***") or in a manner and pursuant to such procedures as the Administrator may determine, which will state the election to exercise the Option, the number of Shares in respect of which the Option is being exercised (the "***Exercised Shares***"), and such other representations and agreements as may be required by the Company pursuant to the provisions of the Plan. The Exercise Notice will be completed by Participant and delivered to the Company. The Exercise Notice will be accompanied by payment of the aggregate Exercise Price as to all Exercised Shares together with any applicable tax withholding. This Option will be deemed to be exercised upon receipt by the Company of such fully executed Exercise Notice accompanied by such aggregate Exercise Price.

5. Method of Payment. Payment of the aggregate Exercise Price will be by any of the following, or a combination thereof, at the election of Participant unless the Administrator in its sole discretion requires a specific method of payment:

(a) cash (U.S. dollars); or

(b) check (denominated in U.S. dollars); or

(c) consideration received by the Company under a formal cashless exercise program adopted by the Company in connection with the Plan; or

(d) surrender of other Shares that have a Fair Market Value on the date of surrender equal to the aggregate Exercise Price of the Exercised Shares, provided that accepting such Shares, in the sole discretion of the Administrator, will not result in any adverse accounting consequences to the Company.

Participant understands and agrees that any cross-border remittance made to exercise this option or transfer proceeds received upon the sale of Stock must be made through a locally authorized financial institution or registered foreign exchange agency and may require the Participant to provide such entity with certain information regarding the transaction.

6. Tax Obligations.

(a) Withholding Taxes. Regardless of any action the Company or Participant's employer (the "***Employer***") takes with respect to any or all applicable national, local, or other tax or social contribution, withholding, required deductions, or other payments, if any, that arise upon the grant, vesting, or exercise of this Option, the holding or subsequent sale of Shares, and the receipt of dividends, if any ("***Tax-Related Items***"), Participant acknowledges and agrees that the ultimate liability for all Tax-Related Items legally due by Participant is and remains Participant's responsibility and may exceed the amount actually withheld by the Company or the Employer. Participant further acknowledges that the Company and/or the Employer (a) makes no representations or undertakings regarding the treatment of any Tax-Related Items in connection with any aspect of the Option, including the grant, vesting, or exercise of the Option, the subsequent sale of Shares acquired under the Plan and the receipt of dividends, if any; and (b) does not commit to and is under no obligation to structure the terms of the Option or any aspect of the Option to reduce or eliminate Participant's liability for Tax-Related Items, or achieve any particular tax result. Further, if Participant has become subject to

tax in more than one jurisdiction between the date of grant and the date of any relevant taxable event, Participant acknowledges that the Company and/or the Employer (or former employer, as applicable) may be required to withhold or account for Tax-Related Items in more than one jurisdiction.

(b) No payment will be made to Participant (or his or her estate or beneficiary) for an Option unless and until satisfactory arrangements (as determined by the Company) have been made by Participant with respect to the payment of any Tax-Related Items obligations of the Company and/or the Employer with respect to the Option. In this regard, Participant authorizes the Company and/or the Employer, or their respective agents, at their discretion, to satisfy the obligations with regard to all Tax-Related Items by one or a combination of the following:

(i) withholding from Participant's wages or other cash compensation paid to Participant by the Company or the Employer; or

(ii) withholding from proceeds of the sale of Shares acquired upon exercise of the Option, either through a voluntary sale or through a mandatory sale arranged by the Company (on Participant's behalf pursuant to this authorization); or

(iii) withholding in Shares to be issued upon exercise of the Option; or

(iv) surrendering already-owned Shares having a Fair Market Value equal to the Tax-Related Items that have been held for such period of time to avoid adverse accounting consequences.

If the obligation for Tax-Related Items is satisfied by withholding Shares, the Participant is deemed to have been issued the full number of Shares purchased for tax purposes, notwithstanding that a number of the Shares is held back solely for the purpose of paying the Tax-Related Items due as a result of the Participant's participation in the Plan. Participant shall pay to the Company or Employer any amount of Tax-Related Items that the Company may be required to withhold as a result of Participant's participation in the Plan that cannot be satisfied by one or more of the means previously described in this paragraph 6. Participant acknowledges and agrees that the Company may refuse to honor the exercise and refuse to issue or deliver the Shares or the proceeds of the sale of Shares if Participant fails to comply with his or her obligations in connection with the Tax-Related Items.

(b) Notice of Disqualifying Disposition of ISO Shares. If the Option granted to Participant herein is an ISO, and if Participant sells or otherwise disposes of any of the Shares acquired pursuant to the ISO on or before the later of (i) the date two (2) years after the Grant Date, or (ii) the date one (1) year after the date of exercise, Participant will immediately notify the Company in writing of such disposition. Participant agrees that Participant may be subject to income tax withholding by the Company on the compensation income recognized by Participant.

(c) Code Section 409A (Applicable Only to Participants Subject to U.S. Taxes). Under Code Section 409A, an option that vests after December 31, 2004 (or that vested on or prior to such date but which was materially modified after October 3, 2004) that was granted with a per Share exercise price that is determined by the Internal Revenue Service (the

"***IRS***") to be less than the Fair Market Value of a Share on the date of grant (a "***Discount Option***") may be considered "deferred compensation." A Discount Option may result in (i) income recognition by Participant prior to the exercise of the option, (ii) an additional twenty percent (20%) federal income tax, and (iii) potential penalty and interest charges. The Discount Option may also result in additional state income, penalty and interest charges to the Participant. Participant acknowledges that the Company cannot and has not guaranteed that the IRS will agree that the per Share exercise price of this Option equals or exceeds the Fair Market Value of a Share on the Date of Grant in a later examination. Participant agrees that if the IRS determines that the Option was granted with a per Share exercise price that was less than the Fair Market Value of a Share on the date of grant, Participant will be solely responsible for Participant's costs related to such a determination.

7. Rights as Stockholder. Neither Participant nor any person claiming under or through Participant will have any of the rights or privileges of a stockholder of the Company in respect of any Shares until such Shares will have been issued (as evidenced by the appropriate entry on the books of the Company or of a duly authorized transfer agent of the Company). After such issuance, Participant will have all the rights of a stockholder of the Company with respect to voting such Shares and receipt of dividends and distributions on such Shares, but prior to such issuance, Participant will not have any rights to dividends and/or distributions on such Shares.

8. No Guarantee of Continued Service. PARTICIPANT ACKNOWLEDGES AND AGREES THAT THE VESTING OF SHARES PURSUANT TO THE VESTING SCHEDULE HEREOF IS EARNED ONLY BY CONTINUING AS A SERVICE PROVIDER AT THE WILL OF THE EMPLOYER AND NOT THROUGH THE ACT OF BEING HIRED, BEING GRANTED THE OPTION OR ACQUIRING SHARES HEREUNDER. PARTICIPANT FURTHER ACKNOWLEDGES AND AGREES THAT THIS AWARD AGREEMENT, THE TRANSACTIONS CONTEMPLATED HEREUNDER AND THE VESTING SCHEDULE SET FORTH HEREIN DO NOT CONSTITUTE AN EXPRESS OR IMPLIED PROMISE OF CONTINUED ENGAGEMENT AS A SERVICE PROVIDER FOR THE VESTING PERIOD, FOR ANY PERIOD, OR AT ALL, AND WILL NOT INTERFERE IN ANY WAY WITH PARTICIPANT'S RIGHT OR THE RIGHT OF THE EMPLOYER TO TERMINATE PARTICIPANT'S RELATIONSHIP AS A SERVICE PROVIDER AT ANY TIME, WITH OR WITHOUT CAUSE (SUBJECT TO APPLICABLE LOCAL LAWS).

9. Nature of Grant. In accepting the Option, Participant acknowledges that:

(a) the Plan is established voluntarily by the Company, it is discretionary in nature and it may be modified, amended, suspended or terminated by the Company at any time;

(b) the grant of the Option is voluntary and occasional and does not create any contractual or other right to receive future grants of Options, or benefits in lieu of Options even if Options have been granted repeatedly in the past;

(c) all decisions with respect to future awards of Options, if any, will be at the sole discretion of the Company;

(d) Participant's participation in the Plan is voluntary;

(e) the Option and the Shares subject to the Option are extraordinary items that do not constitute regular compensation for services rendered to the Company or the Employer, and that are outside the scope of Participant's employment contract, if any;

(f) the Option and the Shares subject to the Option are not intended to replace any pension rights or compensation;

(g) the Option and the Shares subject to the Option are not part of normal or expected compensation or salary for any purposes, including, but not limited to, calculating any severance, resignation, termination, redundancy, dismissal, or end of service payments, bonuses, long-service awards, pension or retirement or welfare benefits or similar payments and in no event should be considered as compensation for, or relating in any way to, past services for the Company or the Employer;

(h) the future value of the underlying Shares is unknown and cannot be predicted with certainty; further, if Participant exercises the Option and obtains Shares, the value of the Shares acquired upon exercise may increase or decrease in value, even below the Exercise Price;

(i) Participant also understands that neither the Company, nor any affiliate is responsible for any foreign exchange fluctuation between local currency and the United States Dollar or the selection by the Company or any affiliate in its sole discretion of an applicable foreign currency exchange rate that may affect the value of the Option (or the calculation of income or Tax-Related Items thereunder);

(j) in consideration of the grant of the Option, no claim or entitlement to compensation or damages shall arise from forfeiture of the Option resulting from termination of employment by the Employer (for any reason whatsoever and whether or not in breach of local labor laws), and Participant

irrevocably releases the Employer from any such claim that may arise; if, notwithstanding the foregoing, any such claim is found by a court of competent jurisdiction to have arisen, Participant shall be deemed irrevocably to have waived his or her entitlement to pursue such claim; and

(k) the Option and the benefits under the Plan, if any, will not automatically transfer to another company in the case of a merger, take-over or transfer of liability.

10. No Advice Regarding Grant. The Company is not providing any tax, legal or financial advice, nor is the Company making any recommendations regarding Participant's participation in the Plan, or Participant's acquisition or sale of the underlying Shares. Participant is hereby advised to consult with his or her own personal tax, legal and financial advisors regarding Participant's participation in the Plan before taking any action related to the Plan.

11. Data Privacy. Participant hereby explicitly and unambiguously consents to the collection, use and transfer, in electronic or other form, of Participant's personal data as described in this Award Agreement by and among, as applicable, the Company and its

affiliates for the exclusive purpose of implementing, administering and managing Participant's participation in the Plan.

Participant understands that the Company and its affiliates may hold certain personal information about Participant, including, but not limited to, Participant's name, home address and telephone number, date of birth, social insurance number or other identification number, salary, nationality, job title, any shares of stock or directorships held in the Company or any affiliate, details of all Options or any other entitlement to shares of stock awarded, canceled, exercised, vested, unvested or outstanding in Participant's favor, for the exclusive purpose of implementing, administering and managing the Plan ("Personal Data"). Participant understands that Personal Data may be transferred to any third parties assisting in the implementation, administration and management of the Plan, that these recipients may be located in the United States, Participant's country (if different than the United States), or elsewhere, and that the recipient's country may have different data privacy laws and protections than Participant's country.

For Participants located in the European Union, the following paragraph applies: Participant understands that he or she may request a list with the names and addresses of any potential recipients of the Personal Data by contacting Participant's local human resources representative. Participant authorizes the recipients to receive, possess, use, retain and transfer the Personal Data, in electronic or other form, for the purposes of implementing, administering and managing Participant's participation in the Plan, including any requisite transfer of such Personal Data as may be required to a broker or other third party with whom Participant may elect to deposit any Shares received upon exercise of the Option. Participant understands that Personal Data will be held only as long as is necessary to implement, administer and manage Participant's participation in the Plan. Participant understands that he or she may, at any time, view Personal Data, request additional information about the storage and processing of Personal Data, require any necessary amendments to Personal Data or refuse or withdraw the consents herein, without cost, by contacting in writing Participant's local human resources representative. Participant understands that refusal or withdrawal of consent may affect Participant's ability to participate in the Plan or to realize benefits from the Option. For more information on the consequences of Participant's refusal to consent or withdrawal of consent, Participant understands that he or she may contact his or her local human resources representative.

12. Address for Notices. Any notice to be given to the Company under the terms of this Award Agreement will be addressed to the Company, in care of its Secretary at Arcadia Biosciences, Inc., 202 Cousteau Place, Suite 200, Davis, CA 95618, or at such other address as the Company may hereafter designate in writing.

13. Non-Transferability of Option. This Option may not be transferred in any manner otherwise than by will or by the laws of descent or distribution and may be exercised during the lifetime of Participant only by Participant.

14. Binding Agreement. Subject to the limitation on the transferability of this grant contained herein, this Award Agreement will be binding upon and inure to the benefit of the heirs, legatees, legal representatives, successors and assigns of the parties hereto.

15. Additional Conditions to Issuance of Stock. If at any time the Company will determine, in its discretion, that the listing, registration or qualification of the Shares upon any securities exchange or under any state, federal or foreign law, or the consent or approval of any governmental regulatory authority is necessary or desirable as a condition to the issuance of Shares to Participant (or his or her estate), such issuance will not occur unless and until such listing, registration, qualification, consent or approval will have been effected or obtained free of any conditions not acceptable to the Company. The Company will make all reasonable efforts to meet the requirements of any such state, federal or foreign law or securities exchange and to obtain any such consent or approval of any such governmental authority. Assuming such compliance, for income tax purposes the Exercised Shares will be considered transferred to Participant on the date the Option is exercised with respect to such Exercised Shares. The Company shall not be obligated to issue any Shares pursuant to this Option at any time if the issuance of Shares, or the exercise of an Option by Participant, violates or is not in compliance with any laws, rules or regulations of the United States or any state or country.

16. Lock-Up Agreement. In connection with the initial public offering of the Company's securities, Optionee hereby agrees not to offer, pledge, sell, contract to sell, make any short sale of, loan, grant any option for the purchase of, or otherwise dispose of any securities of the Company however and whenever acquired (other than those included in the registration) without the prior written consent of the Company and the managing underwriters for such offering for such period of time (not to exceed 180 days) from the effective date of such registration as may be requested by the Company or such managing underwriters and to execute an agreement reflecting the foregoing as may be requested by the underwriters at the time of the Company's initial public offering. In addition, upon request of the Company or the underwriters managing a public offering of the Company's securities (other than the initial public offering), Optionee hereby agrees to be bound by similar restrictions, and to sign a similar agreement, in connection with no more than one additional registration statement filed within 12 months after the closing date of the initial public offering, provided that the duration of the lock-up period with respect to such additional registration shall not exceed 90 days from the effective date of such additional registration statement. Notwithstanding the foregoing, if during the last 17 days of the restricted period, the Company issues an earnings release or material news or a material event relating to the Company occurs, or prior to the expiration of the restricted period the Company announces that it will release earnings results during the 16-day period beginning on the last day of the restricted period, then, upon the request of the managing underwriter, to the extent required by any FINRA rules, the restrictions imposed by this subsection shall continue to apply until the end of the third trading day following the expiration of the 15-day period beginning on the issuance of the earnings release or the occurrence of the material news or material event. In no event will the restricted period extend beyond 216 days after the effective date of the registration statement. In order to enforce the restriction set

forth above, the Company may impose stop-transfer instructions with respect to the Shares acquired under this Agreement until the end of the applicable stand-off period. The Company's underwriters shall be beneficiaries of the agreement set forth in this Section.

If the underwriters release or waive any of the foregoing restrictions in connection with a transfer of shares of Common Stock, the underwriters shall notify the Company at least three business days before the effective date of any such release or waiver. Further, the Company will announce the impending release or waiver by press release through a major news

service at least two business days before the effective date of the release or waiver. Any release or waiver granted by the underwriters shall only be effective two business days after the publication date of such press release. The provisions of this paragraph will not apply if (x) the release or waiver is effected solely to permit a transfer not for consideration and (y) the transferee has agreed in writing to be bound by the same terms of the lock-up provisions applicable in general to the extent, and for the duration, that such lock-up provision remain in effect at the time of the transfer.

17. Plan Governs. This Award Agreement is subject to all terms and provisions of the Plan. In the event of a conflict between one or more provisions of this Award Agreement and one or more provisions of the Plan, the provisions of the Plan will govern. Capitalized terms used and not defined in this Award Agreement will have the meaning set forth in the Plan.

18. Administrator Authority. The Administrator will have the power to interpret the Plan and this Award Agreement and to adopt such rules for the administration, interpretation and application of the Plan as are consistent therewith and to interpret or revoke any such rules (including, but not limited to, the determination of whether or not any Shares subject to the Option have vested). All actions taken and all interpretations and determinations made by the Administrator in good faith will be final and binding upon Participant, the Company and all other interested persons. No member of the Administrator will be personally liable for any action, determination or interpretation made in good faith with respect to the Plan or this Award Agreement.

19. Electronic Delivery. The Company may, in its sole discretion, decide to deliver any documents related to Options awarded under the Plan or future options that may be awarded under the Plan by electronic means or request Participant's consent to participate in the Plan by electronic means. Participant hereby consents to receive such documents by electronic delivery and agrees to participate in the Plan through any on-line or electronic system established and maintained by the Company or another third party designated by the Company.

20. Language. If Participant has received this Award Agreement, including appendices, or any other document related to the Plan translated into a language other than English, and the meaning of the translated version is different than the English version, the English version will control.

21. Imposition of Other Requirements. The Company reserves the right to impose other requirements on Participant's participation in the Plan, on the Option and on any Shares acquired under the Plan, to the extent the Company determines it is necessary or advisable in order to comply with local law or facilitate the administration of the Plan, and to require Participant to sign any additional agreements or undertakings that may be necessary to accomplish the foregoing. Furthermore, Participant understands that the laws of the country in which he or she is resident at the time of grant, vesting, and/or exercise of this Option or the holding or disposition of Shares (including any rules or regulations governing securities, foreign exchange, tax, labor or other matters) may restrict or prevent exercise of this Option or may subject Participant to additional procedural or regulatory requirements he or she is solely responsible for and will have to independently fulfill in relation to this Option or the Shares. Notwithstanding any provision herein, this Option and any Shares shall be subject to any special

terms and conditions or disclosures as set forth in any addendum for Participant's country (the "Country-Specific Addendum," which forms part this Award Agreement).

22. Captions. Captions provided herein are for convenience only and are not to serve as a basis for interpretation or construction of this Award Agreement.

23. Agreement Severable. In the event that any provision in this Award Agreement will be held invalid or unenforceable, such provision will be severable from, and such invalidity or unenforceability will not be construed to have any effect on, the remaining provisions of this Award Agreement.

24. Modifications to the Agreement. This Award Agreement constitutes the entire understanding of the parties on the subjects covered. Participant expressly warrants that he or she is not accepting this Award Agreement in reliance on any promises, representations, or inducements other than those contained herein. Modifications to this Award Agreement or the Plan can be made only in an express written contract executed by a duly authorized officer of the Company. Notwithstanding anything to the contrary in the Plan or this Award Agreement, the Company reserves the right to revise this Award Agreement as it deems necessary or advisable, in its sole discretion and without the consent of Participant, to comply with Code Section 409A or to otherwise avoid imposition of any additional tax or income recognition under Section 409A of the Code in connection to this Option.

25. Amendment, Suspension or Termination of the Plan. By accepting this Award, Participant expressly warrants that he or she has received an Option under the Plan, and has received, read and understood a description of the Plan. Participant understands that the Plan is discretionary in nature and may be amended, suspended or terminated by the Company at any time.

26. Governing Law. This Award Agreement will be governed by the laws of the State of Delaware, without giving effect to the conflict of law principles thereof. For purposes of litigating any dispute that arises under this Award Agreement, the parties hereby submit to and consent to the jurisdiction of the State of California, and agree that such litigation will be conducted in the courts of the Yolo County, California, or the federal courts for the United States for the Eastern District of California, and no other courts.

o O o

EXHIBIT B

ARCADIA BIOSCIENCES, INC.

2015 OMNIBUS EQUITY INCENTIVE PLAN

EXERCISE NOTICE

Arcadia Biosciences, Inc.
4222 E Thomas Road, Suite 245
Phoenix, AZ 85018
Attention: Secretary

1. Exercise of Option. Effective as of today, _____, ____ , the undersigned ("***Purchaser***") hereby elects to purchase _____ shares (the "***Shares***") of the Common Stock of Arcadia Biosciences, Inc. (the "***Company***") under and pursuant to the 2015 Omnibus Equity Incentive Plan (the "***Plan***") and the Stock Option Award Agreement dated _____ (the "***Award Agreement***"). The purchase price for the Shares will be $_____, as required by the Award Agreement.

2. Delivery of Payment. Purchaser herewith delivers to the Company the full purchase price of the Shares and any required tax withholding to be paid in connection with the exercise of the Option.

3. Representations of Purchaser. Purchaser acknowledges that Purchaser has received, read and understood the Plan and the Award Agreement and agrees to abide by and be bound by their terms and conditions.

4. Rights as Stockholder. Until the issuance (as evidenced by the appropriate entry on the books of the Company or of a duly authorized transfer agent of the Company) of the Shares, no right to vote or receive dividends or any other rights as a stockholder will exist with respect to the Shares subject to the Option, notwithstanding the exercise of the Option. The Shares so acquired will be issued to Purchaser as soon as practicable after exercise of the Option. No adjustment will be made for a dividend or other right for which the record date is prior to the date of issuance, except as provided in Section 13 of the Plan.

5. Tax Consultation. Purchaser understands that Purchaser may suffer adverse tax consequences as a result of Purchaser's purchase or disposition of the Shares. Purchaser represents that Purchaser has consulted with any tax consultants Purchaser deems advisable in connection with the purchase or disposition of the Shares and that Purchaser is not relying on the Company for any tax advice.

6. Entire Agreement; Governing Law. The Plan and Award Agreement are incorporated herein by reference. This Exercise Notice, the Plan and the Award Agreement constitute the entire

---

agreement of the parties with respect to the subject matter hereof and supersede in their entirety all prior undertakings and agreements of the Company and Purchaser with respect to the subject matter hereof, and may not be modified adversely to the Purchaser's interest except by means of a writing signed by the Company and Purchaser. This agreement is governed by the internal substantive laws, but not the choice of law rules, of the State of Delaware.

Submitted by:	Accepted by:
PURCHASER:	ARCADIA BIOSCIENCES, INC
_____	_____
Signature	By
_____	_____
Print Name	Title
Address:	
_____	
_____	_____
	Date Received

ARCADIA BIOSCIENCES, INC.

2015 OMNIBUS EQUITY INCENTIVE PLAN

RESTRICTED STOCK UNIT AWARD AGREEMENT

Unless otherwise defined herein, the terms defined in the Arcadia Biosciences, Inc. 2015 Omnibus Equity Incentive Plan (the "***Plan***") will have the same defined meanings in this Restricted Stock Unit Award Agreement (the "***Award Agreement***").

I. NOTICE OF RESTRICTED STOCK UNIT GRANT

Participant Name:

Address:

You have been granted the right to receive an Award of Restricted Stock Units, subject to the terms and conditions of the Plan and this Award Agreement, as follows:

Grant Number _____

Date of Grant _____

Vesting Commencement Date _____

Number of Restricted Stock Units _____

Vesting Schedule:

Subject to Section 3 of the Award Agreement and any acceleration provisions contained in the Plan or set forth below, the Restricted Stock Unit will vest in accordance with the following schedule:

[insert vesting schedule]

In the event Participant ceases to be a Service Provider (or gives or is given notice of such termination) for any or no reason before Participant vests in the Restricted Stock Unit, the Restricted Stock Unit and Participant's right to acquire any Shares hereunder will immediately terminate.

By Participant's signature and the signature of the representative of Arcadia Biosciences, Inc. (the "***Company***") below, Participant and the Company agree that this Award of Restricted Stock Units is granted under and governed by the terms and conditions of the Plan and this Award Agreement, including the Terms and Conditions of Restricted Stock Unit Grant (including any country-specific addendum thereto), attached hereto as Exhibit A, all of which are made a part of this document. Participant has reviewed the Plan and this Award Agreement in their entirety, has had an opportunity to obtain the advice of counsel prior to executing this Award Agreement and fully understands all provisions of the Plan and Award Agreement. Participant hereby agrees to accept as binding, conclusive and final all decisions or

---

interpretations of the Administrator upon any questions relating to the Plan and Award Agreement. Participant further agrees to promptly notify the Company in writing upon any change in the residence address indicated below.

PARTICIPANT:	ARCADIA BIOSCIENCES, INC.
_____	_____
Signature	By
_____	_____
Print Name	Title

Residence Address:

_____

_____

EXHIBIT A

TERMS AND CONDITIONS OF RESTRICTED STOCK UNIT GRANT

1. Grant. The Company hereby grants to the individual named in the Notice of Grant attached as Part I of this Award Agreement (the "***Participant***") under the Plan an Award of Restricted Stock Units, subject to all of the terms and conditions in this Award Agreement and the Plan, which is incorporated herein by reference. Subject to Section 13 of the Plan, in the event of a conflict between the terms and conditions of the Plan and the terms and conditions of this Award Agreement, the terms and conditions of the Plan will prevail.

2. Company's Obligation to Pay. Each Restricted Stock Unit represents the right to receive a Share on the date it vests. Unless and until the Restricted Stock Units will have vested in the manner set forth in Section 3, Participant will have no right to payment of any such Restricted Stock Units. Prior to actual payment of any vested Restricted Stock Units, such Restricted Stock Unit will represent an unsecured obligation of the Company, payable (if at all) only from the general assets of the Company. Any Restricted Stock Units that vest in accordance with Sections 3 or 4 will be paid to Participant (or in the event of Participant's death, to his or her estate) in whole Shares as set forth herein, subject to Participant satisfying any applicable tax withholding or other obligations as set forth in Section 7. Subject to the provisions of Section 4, such vested Restricted Stock Units will be paid in Shares as soon as practicable after vesting, but in each such case within the period ending no later than the date that is two and one-half (2½) months from the end of the Company's tax year that includes the vesting date.

3. Vesting Schedule. Except as provided in Section 4, and subject to Section 5, the Restricted Stock Units awarded by this Award Agreement will vest in accordance with the vesting provisions set forth in the Notice of Grant. Restricted Stock Units scheduled to vest on a certain date or upon the occurrence of a certain condition will not vest in Participant in accordance with any of the provisions of this Award Agreement, unless Participant will have been continuously a Service Provider from the Date of Grant until the date such vesting occurs. Service Provider status will end on the day that notice of termination is provided whether oral or written (whether by the Company or Parent or Subsidiary for any reason or by Participant upon resignation) and will not be extended by any notice

period that may be required contractually or under applicable local law. Notwithstanding the foregoing, the Administrator (or any delegate) shall have the sole and absolute discretion to determine when Participant is no longer providing active service for purposes of Service Provider status and participation in the Plan.

4. Administrator Discretion. The Administrator, in its discretion, may accelerate the vesting of the balance, or some lesser portion of the balance, of the unvested Restricted Stock Units at any time, subject to the terms of the Plan. If so accelerated, such Restricted Stock Units will be considered as having vested as of the date specified by the Administrator.

Notwithstanding anything in the Plan or this Award Agreement to the contrary, if the vesting of the balance, or some lesser portion of the balance, of the Restricted Stock Units is accelerated in connection with Participant's termination as a Service Provider (provided that such termination is a "separation from service" within the meaning of Section 409A, as

determined by the Company), other than due to death**,** and if (x) Participant is a "specified employee" within the meaning of Section 409A at the time of such termination as a Service Provider and (y) the payment of such accelerated Restricted Stock Units will result in the imposition of additional tax under Section 409A if paid to Participant on or within the six (6) month period following Participant's termination as a Service Provider, then the payment of such accelerated Restricted Stock Units will not be made until the date six (6) months and one (1) day following the date of Participant's termination as a Service Provider, unless the Participant dies following his or her termination as a Service Provider, in which case, the Restricted Stock Units will be paid in Shares to the Participant's estate as soon as practicable following his or her death. It is the intent of this Award Agreement to comply with the requirements of Section 409A so that none of the Restricted Stock Units provided under this Award Agreement or Shares issuable thereunder will be subject to the additional tax imposed under Section 409A, and any ambiguities herein will be interpreted to so comply. For purposes of this Award Agreement, "Section 409A" means Section 409A of the Code, and any proposed, temporary or final Treasury Regulations and Internal Revenue Service guidance thereunder, as each may be amended from time to time.

5. Forfeiture upon Termination of Status as a Service Provider. Notwithstanding any contrary provision of this Award Agreement, the balance of the Restricted Stock Units that have not vested as of the time oral or written notice is provided (whether by Participant or the Company or Parent or Subsidiary) of Participant's termination as a Service Provider for any or no reason and Participant's right to acquire any Shares hereunder will immediately terminate.

6. Death of Participant. Any distribution or delivery to be made to Participant under this Award Agreement will, if Participant is then deceased, be made to Participant's designated beneficiary, or if no beneficiary survives Participant, the administrator or executor of Participant's estate. Any such transferee must furnish the Company with (a) written notice of his or her status as transferee, and (b) evidence satisfactory to the Company to establish the validity of the transfer and compliance with any laws or regulations pertaining to said transfer.

7. Withholding of Taxes. Regardless of any action the Company or Participant's employer (the "***Employer***") takes with respect to any or all applicable national, local, or other tax or social contribution, withholding, required deductions, or other payments, if any, that arise upon the grant or vesting of the Restricted Stock Units or the holding or subsequent sale of Shares, and the receipt of dividends, if any ("***Tax-Related Items***"), Participant acknowledges and agrees that the ultimate liability for all Tax-Related Items legally due by Participant is and remains Participant's responsibility and may exceed the amount actually withheld by the Company or the Employer. Participant further acknowledges that the Company and the Employer (a) make no representations or undertakings regarding the treatment of any Tax-Related Items in connection with any aspect of the Restricted Stock Units, including grant or vesting, the subsequent sale of Shares acquired under the Plan, and the receipt of dividends, if any; and (b) does not commit to and is under no obligation to structure the terms of the Restricted Stock Units or any aspect of the Restricted Stock Units to reduce or eliminate Participant's liability for Tax-Related Items, or achieve any particular tax result. Further, if Participant has become subject to tax in more than one jurisdiction between the date of grant and the date of any relevant taxable event, Participant acknowledges that the Company and/or the Employer (or former employer, as applicable) may be required to withhold or account for Tax-

Related Items in more than one jurisdiction. Notwithstanding any contrary provision of this Award Agreement, no certificate representing the Shares will be issued to Participant, unless and until satisfactory arrangements (as determined by the Administrator) will have been made by Participant with respect to the payment of any Tax-Related Items which the Company determines must be withheld with respect to such Shares.

The Administrator, in its sole discretion and pursuant to such procedures as it may specify from time to time, may permit Participant to satisfy such Tax-Related Items, in whole or in part (without limitation) by (a) paying cash, (b) electing to have the Company withhold otherwise deliverable Shares having a Fair Market Value equal to the minimum amount required to be withheld, (c) delivering to the Company already vested and owned Shares having a Fair Market Value equal to the amount required to be withheld, or (d) selling a sufficient number of such Shares otherwise deliverable to Participant through such means as the Company may determine in its sole discretion (whether through a broker or otherwise) equal to the amount required to be withheld. To the extent determined appropriate by the Company in its discretion, it will have the right (but not the obligation) to satisfy any Tax-Related Items by reducing the number of Shares otherwise deliverable to Participant. If Participant fails to make satisfactory arrangements for the payment of any required Tax-Related Items hereunder at the time any applicable Restricted Stock Units otherwise are scheduled to vest pursuant to Sections 3 or 4, Participant will permanently forfeit such Restricted Stock Units and any right to receive Shares thereunder and the Restricted Stock Units will be returned to the Company at no cost to the Company.

8. Rights as Stockholder. Neither Participant nor any person claiming under or through Participant will have any of the rights or privileges of a stockholder of the Company in respect of any Shares deliverable hereunder unless and until certificates representing such Shares will have been issued, recorded on the records of the Company or its transfer agents or registrars, and delivered to Participant. After such issuance, recordation and delivery, Participant will have all the rights of a stockholder of the Company with respect to voting such Shares and receipt of dividends and distributions on such Shares, but prior to such issuance, Participant will not have any rights to dividends and/or distributions on such Shares.

9. No Guarantee of Continued Service or Grants. PARTICIPANT ACKNOWLEDGES AND AGREES THAT THE VESTING OF THE RESTRICTED STOCK UNITS PURSUANT TO THE VESTING SCHEDULE HEREOF IS EARNED ONLY BY CONTINUING AS A SERVICE PROVIDER AT THE WILL OF THE COMPANY (OR THE PARENT OR SUBSIDIARY EMPLOYING OR RETAINING PARTICIPANT) AND NOT THROUGH THE ACT OF BEING HIRED, BEING GRANTED THIS AWARD OF RESTRICTED STOCK UNITS OR ACQUIRING SHARES HEREUNDER. PARTICIPANT FURTHER ACKNOWLEDGES AND AGREES THAT THIS AWARD AGREEMENT, THE TRANSACTIONS CONTEMPLATED HEREUNDER AND THE VESTING SCHEDULE SET FORTH HEREIN DO NOT CONSTITUTE AN EXPRESS OR IMPLIED PROMISE OF CONTINUED ENGAGEMENT AS A SERVICE PROVIDER FOR THE VESTING PERIOD, FOR ANY PERIOD, OR AT ALL, AND WILL NOT INTERFERE IN ANY WAY WITH PARTICIPANT'S RIGHT OR THE RIGHT OF THE COMPANY (OR THE PARENT OR SUBSIDIARY EMPLOYING OR RETAINING PARTICIPANT) TO TERMINATE PARTICIPANT'S RELATIONSHIP AS A SERVICE PROVIDER AT ANY TIME, WITH OR

WITHOUT CAUSE.

Participant also acknowledges and agrees that: (a) the Plan is established voluntarily by the Company, it is discretionary in nature and it may be modified, amended, suspended or terminated by the Company at any time; (b) the grant of Restricted Stock Units is voluntary and occasional and does not Create any contractual or other right to receive future grants of Restricted Stock Units, or benefits in lieu of Restricted Stock Units even if Restricted Stock Units have been granted repeatedly in the past; (c) all decisions with respect to future awards of Restricted Stock Units, if any, will be at the sole discretion of the Company; (d) Participant's participation in the Plan is voluntary; (e) the Restricted Stock Units and the Shares subject to the Restricted Stock Units are extraordinary items that do not constitute regular compensation for services rendered to the Company or the Employer, and that are outside the scope of Participant's employment contract, if any; (f) the Restricted Stock Units and the Shares subject to the Restricted Stock Units are not intended to replace any pension rights or compensation; (g) the Restricted Stock Units and the Shares subject to the Restricted Stock Units are not part of normal or expected compensation or salary for any purposes, including, but not limited to, calculating any severance, resignation, termination, redundancy, dismissal, or end of service payments, bonuses, long-service awards, pension or retirement or welfare benefits or similar payments and in no event should be considered as compensation for, or relating in any way to, past services for the Company or the Employer.

10. Address for Notices. Any notice to be given to the Company under the terms of this Award Agreement will be addressed to the Company, in care of its Secretary at Arcadia Biosciences, Inc., 202 Cousteau Place, Suite 200, Davis, CA 95618, or at such other address as the Company may hereafter designate in writing.

11. Grant is Not Transferable. Except to the limited extent provided in Section 6, this grant and the rights and privileges conferred hereby will not be transferred, assigned, pledged or hypothecated in any way (whether by operation of law or otherwise) and will not be subject to sale under execution, attachment or similar process. Upon any attempt to transfer, assign, pledge, hypothecate or otherwise dispose of this grant, or any right or privilege conferred hereby, or upon any attempted sale under any execution, attachment or similar process, this grant and the rights and privileges conferred hereby immediately will become null and void.

12. Binding Agreement. Subject to the limitation on the transferability of this grant contained herein, this Award Agreement will be binding upon and inure to the benefit of the heirs, legatees, legal representatives, successors and assigns of the parties hereto.

13. Additional Conditions to Issuance of Stock. If at any time the Company will determine, in its discretion, that the listing, registration or qualification of the Shares upon any securities exchange or under any state or federal law, or the consent or approval of any governmental regulatory authority is necessary or desirable as a condition to the issuance of Shares to Participant (or his or her estate), such issuance will not occur unless and until such listing, registration, qualification, consent or approval will have been effected or obtained free of any conditions not acceptable to the Company. Where the Company determines that the delivery of the payment of any Shares will violate federal securities laws or other applicable laws, the Company will defer delivery until the earliest date at which the Company reasonably anticipates

that the delivery of Shares will no longer cause such violation. The Company will make all reasonable efforts to meet the requirements of any such state or federal law or securities exchange and to obtain any such consent or approval of any such governmental authority. The Company shall not be obligated to issue any Shares pursuant to the Restricted Stock Units at any time if the issuance of Shares violates or is not in compliance with any laws, rules or regulations of the United States or any state or country.

Furthermore, the Company reserves the right to impose other requirements on Participant's participation in the Plan, on the Restricted Stock Units and on any Shares acquired under the Plan, to the extent the Company determines it is necessary or advisable in order to comply with local law or facilitate the administration of the Plan, and to require Participant to sign any additional agreements or undertakings that may be necessary to accomplish the foregoing. Furthermore, Participant understands that the laws of the country in which he or she is resident at the time of grant or vesting of the Restricted Stock Units or the holding or disposition of Shares (including any rules or regulations governing securities, foreign exchange, tax, labor or other matters) may restrict or prevent the issuance of Shares or may subject Participant to additional procedural or regulatory requirements he or she is solely responsible for and will have to independently fulfill in relation to the Restricted Stock Units or the Shares. Notwithstanding any provision herein, the Restricted Stock Units and any Shares shall be subject to any special terms and conditions or disclosures as set forth in any addendum for Participant's country (the "Country-Specific Addendum," which forms part this Award Agreement).

14. Lock-Up Agreement. In connection with the initial public offering of the Company's securities, Participant hereby agrees not to offer, pledge, sell, contract to sell, make any short sale of, loan, grant any option for the purchase of, or otherwise dispose of any securities of the Company however and whenever acquired (other than those included in the registration) without the prior written consent of the Company and the managing underwriters for such offering for such period of time (not to exceed 180 days) from the effective date of such registration as may be requested by the Company or such managing underwriters and to execute an agreement reflecting the foregoing as may be requested by the underwriters at the time of the Company's initial public offering. In addition, upon request of the Company or the underwriters managing a public offering of the Company's securities (other than the initial public offering), Participant hereby agrees to be bound by similar restrictions, and to sign a similar agreement, in connection with no more than one additional registration statement filed within 12 months after the closing date of the initial public offering, provided that the duration of the lock-up period with respect to such additional registration shall not exceed 90 days from the effective date of such additional registration statement. Notwithstanding the foregoing, if during the last 17 days of the restricted period, the Company issues an earnings release or material news or a material event relating to the Company occurs, or prior to the expiration of the restricted period the Company announces that it will release earnings results during the 16-day period beginning on the last day of the restricted period, then, upon the request of the managing underwriter, to the extent required by any FINRA rules, the restrictions imposed by this subsection shall continue to apply until the end of the third trading day following the expiration of the 15-day period beginning on the issuance of the earnings release or the occurrence of the material news or material event. In no event will the restricted period extend beyond 216 days after the effective date of the registration statement. In order to enforce the restriction set forth above, the Company may impose stop-transfer instructions with respect to the Shares acquired under this

Agreement until the end of the applicable stand-off period. The Company's underwriters shall be beneficiaries of the agreement set forth in this Section.

If the underwriters release or waive any of the foregoing restrictions in connection with a transfer of shares of Common Stock, the underwriters shall notify the Company at least three business days before the effective date of any such release or waiver. Further, the Company will announce the impending release or waiver by press release through a major news service at least two business days before the effective date of the release or waiver. Any release or waiver granted by the underwriters shall only be effective two business days after the publication date of such press release. The provisions of this paragraph will not apply if (x) the release or waiver is effected solely to permit a transfer not for consideration and (y) the transferee has agreed in writing to be bound by the same terms of the lock-up provisions applicable in general to the extent, and for the duration, that such lock-up provision remain in effect at the time of the transfer.

15. Plan Governs. This Award Agreement is subject to all terms and provisions of the Plan. In the event of a conflict between one or more provisions of this Award Agreement and one or more provisions of the Plan, the provisions of the Plan will govern. Capitalized terms used and not defined in this Award Agreement will have the meaning set forth in the Plan.

16. Administrator Authority. The Administrator will have the power to interpret the Plan and this Award Agreement and to adopt such rules for the administration, interpretation and application of the Plan as are consistent therewith and to interpret or revoke any such rules (including, but not limited to, the determination of whether or not any Restricted Stock Units have vested). All actions taken and all interpretations and determinations made by the Administrator in good faith will be final and binding upon Participant, the Company and all other interested persons. No member of the Administrator will be personally liable for any action, determination or interpretation made in good faith with respect to the Plan or this Award Agreement.

17. Electronic Delivery and Language. The Company may, in its sole discretion, decide to deliver any documents related to Restricted Stock Units awarded under the Plan or future Restricted Stock Units that may be awarded under the Plan by electronic means or request Participant's consent to participate in the Plan by electronic means. Participant hereby consents to receive such documents by electronic delivery and agrees to participate in the Plan through any on-line or electronic system established and maintained by the Company or another third party designated by the Company. If Participant has received this Award Agreement, including appendices, or any other document related to the Plan translated into a language other than English, and the meaning of the translated version is different than the English version, the English version will control.

18. Captions. Captions provided herein are for convenience only and are not to serve as a basis for interpretation or construction of this Award Agreement.

19. Agreement Severable. In the event that any provision in this Award Agreement will be held invalid or unenforceable, such provision will be severable from, and such invalidity or unenforceability will not be construed to have any effect on, the remaining provisions of this

Award Agreement.

20. Modifications to the Agreement. This Award Agreement constitutes the entire understanding of the parties on the subjects covered. Participant expressly warrants that he or she is not accepting this Award Agreement in reliance on any promises, representations, or inducements other than those contained herein. Modifications to this Award Agreement or the Plan can be made only in an express written contract executed by a duly authorized officer of the Company. Notwithstanding anything to the contrary in the Plan or this Award Agreement, the Company reserves the right to revise this Award Agreement as it deems necessary or advisable, in its sole discretion and without the consent of Participant, to comply with Section 409A or to otherwise avoid imposition of any additional tax or income recognition under Section 409A in connection to this Award of Restricted Stock Units.

21. Data Privacy. ***Participant hereby explicitly and unambiguously consents to the collection, use and transfer, in electronic or other form, of Participant's personal data as described in this Award Agreement by and among, as applicable, the Company and its affiliates for the exclusive purpose of implementing, administering and managing Participant's participation in the Plan. Participant understands that the Company and its affiliates may hold certain personal information about Participant, including, but not limited to, Participant's name, home address and telephone number, date of birth, social insurance number or other identification number, salary, nationality, job title, any shares of stock or directorships held in the Company or any affiliate, details of all Restricted Stock Units or any other entitlement to shares of stock awarded, canceled, exercised, vested, unvested or outstanding in Participant's favor, for the exclusive purpose of implementing, administering and managing the Plan ("Personal Data"). Participant understands that Personal Data may be transferred to any third parties assisting in the implementation, administration and management of the Plan, that these recipients may be located in the United States, Participant's country (if different than the United States), or elsewhere, and that the recipient's country may have different data privacy laws and protections than Participant's country.***

For Participants located in the European Union, the following paragraph applies: Participant understands that he or she may request a list with the names and addresses of any potential recipients of the Personal Data by contacting Participant's local human resources representative. Participant authorizes the recipients to receive, possess, use, retain and transfer the Personal Data, in electronic or other form, for the purposes of implementing, administering and managing Participant's participation in the Plan, including any requisite transfer of such Personal Data as may be required to a broker or other third party with whom Participant may elect to deposit any Shares received. Participant understands that Personal Data will be held only as long as is necessary to implement, administer and manage Participant's participation in the Plan. Participant understands that he or she may, at any time, view Personal Data, request additional information about the storage and processing of Personal Data, require any necessary amendments to Personal Data or refuse or withdraw the consents herein, without cost, by contacting in writing Participant's local human resources representative. Participant understands that refusal or withdrawal of consent may affect Participant's ability to participate in the Plan or to realize benefits from the Plan. For more information on the consequences of Participant's refusal to consent or withdrawal of consent,

Participant understands that he or she may contact his or her local human resources representative.

22. Foreign Exchange Fluctuations and Restrictions. Participant understands and agrees that the future value of the underlying Shares is unknown and cannot be predicted with certainty and may decrease. Participant also understands that neither the Company, nor any affiliate is responsible for any foreign exchange fluctuation between local currency and the United States Dollar or the selection by the Company or any affiliate in its sole discretion of an applicable foreign currency exchange rate that may affect the value of the Restricted Stock Units or Shares received (or the calculation of income or Tax-Related Items thereunder). Participant understands and agrees that any cross-border remittance made to transfer proceeds received upon the sale of Shares must be made through

a locally authorized financial institution or registered foreign exchange agency and may require the Participant to provide such entity with certain information regarding the transaction.

23. Amendment, Suspension or Termination of the Plan. By accepting this Award, Participant expressly warrants that he or she has received an Award of Restricted Stock Units under the Plan, and has received, read and understood a description of the Plan. Participant understands that the Plan is discretionary in nature and may be amended, suspended or terminated by the Company at any time.

24. Governing Law. This Award Agreement will be governed by the laws of the State of Delaware, without giving effect to the conflict of law principles thereof. For purposes of litigating any dispute that arises under this Award of Restricted Stock Units or this Award Agreement, the parties hereby submit to and consent to the jurisdiction of the State of California, and agree that such litigation will be conducted in the courts of the Yolo County, California, or the federal courts for the United States for the Eastern District of California, and no other courts.

o O o

Exhibit 10.10

ARCADIA BIOSCIENCES, INC.

2015 EMPLOYEE STOCK PURCHASE PLAN

1. Purpose. The purpose of the Plan is to provide employees of the Company and its Designated Subsidiaries with an opportunity to purchase Common Stock through accumulated payroll deductions (or through other means as set forth below). The Company's intention is to have the Plan qualify as an "employee stock purchase plan" under Section 423 of the Code. The provisions of the Plan, accordingly, will be construed so as to extend and limit Plan participation in a uniform and nondiscriminatory basis consistent with the requirements of Section 423 of the Code. Notwithstanding the forgoing, the Company may make offerings under the Plan that are not intended to qualify under Section 423 of the Code to the extent deemed advisable for Designated Subsidiaries outside the United States ("***Non-423 Component***"). Furthermore, the Company may make separate offerings under the Plan, each of which may have different terms, but each separate offering will be intended to comply with the requirements of Section 423 of the Code.

2. Definitions.

(a) "Administrator" means the Board or any Committee designated by the Board to administer the Plan pursuant to Section 15.

(b) "Applicable Laws" means the requirements relating to the administration of equity-based awards under U.S. state corporate laws, U.S. federal and state securities laws, the Code, any stock exchange or quotation system on which the Common Stock is listed or quoted and the applicable laws of any foreign country or jurisdiction where Awards are, or will be, granted under the Plan.

(c) "Board" means the Board of Directors of the Company.

(d) "Change in Control" except as may otherwise be provided in a Stock Option Agreement, Restricted Stock Agreement or other applicable agreement, means the occurrence of any of the following:

(i) The consummation of a merger or consolidation of the Company with or into another entity or any other corporate reorganization, if the Company's shareholders immediately prior to such merger, consolidation or reorganization cease to directly or indirectly own immediately after such merger, consolidation or reorganization at least a majority of the combined voting power of the continuing or surviving entity's securities outstanding immediately after such merger, consolidation or other reorganization;

(ii) The consummation of the sale, transfer or other disposition of all or substantially all of the Company's assets (other than (x) to a corporation or other entity of which at least a majority of its combined voting power is owned directly or indirectly by the Company, (y) to a corporation or other entity owned directly or indirectly by the shareholders of the Company in substantially the same proportions as their ownership of the common stock of the Company or (z) to a continuing or surviving entity described in Section 2(d)(i) in connection with a merger,

---

consolidation or corporate reorganization which does not result in a Change in Control under Section 2(d)(i));

(iii) A change in the effective control of the Company which occurs on the date that a majority of members of the Board is replaced during any twelve (12) month period by Directors whose appointment or election is not endorsed by a majority of the members of the Board prior to the date of the appointment or election. For purposes of this clause, if any Person (as defined below in Section 2(d)(iv)) is considered to be in effective control of the Company, the acquisition of additional control of the Company by the same Person will not be considered a Change in Control;

(iv) The consummation of any transaction as a result of which any Person becomes the "beneficial owner" (as defined in Rule 13d-3 under the Exchange Act), directly or indirectly, of securities of the Company representing at least fifty percent (50%) of the total voting power represented by the Company's then outstanding voting securities. For purposes of this Paragraph (iv), the term "person" shall have the same meaning as when used in sections 13(d) and 14(d) of the Exchange Act but shall exclude:

(1) a trustee or other fiduciary holding securities under an employee benefit plan of the Company or an affiliate of the Company;

(2) a corporation or other entity owned directly or indirectly by the shareholders of the Company in substantially the same proportions as their ownership of the common stock of the Company;

(3) the Company; and

(4) a corporation or other entity of which at least a majority of its combined voting power is owned directly or indirectly by the Company; or

(v) A complete winding up, liquidation or dissolution of the Company.

A transaction shall not constitute a Change in Control if its sole purpose is to change the state of the Company's incorporation or to create a holding company that will be owned in substantially the same proportions by the persons who held the Company's securities immediately before such transactions.

(e) "Code" means the Internal Revenue Code of 1986, as amended. Reference to a specific section of the Code or regulation thereunder shall include such section or regulation, any valid regulation promulgated under such section, and any comparable provision of any future legislation or regulation amending, supplementing or superseding such section or regulation.

(f) "Committee" means a committee of the Board appointed in accordance with Section 15 hereof.

(g) "Common Stock" means the common stock of the Company.

(h) "Company" means Arcadia Biosciences, Inc., a Delaware corporation, or any successor thereto.

(i) "Compensation" means an Eligible Employee's regular and recurring straight time gross earnings, payments for overtime and shift premium, but exclusive of payments for incentive compensation, bonuses and other similar compensation. The Administrator, in its discretion, may, on a uniform and nondiscriminatory basis, establish a different definition of Compensation for a subsequent Offering Period. In addition, the Administrator has the authority to make decisions about how Compensation should be interpreted for Eligible Employees outside the United States to the extent there are items of compensation or remuneration not specifically addressed above.

(j) "Designated Subsidiary" means any Subsidiary that has been designated by the Administrator from time to time in its sole discretion as eligible to participate in the Plan. Unless the Administrator expressly states otherwise, each Designated Subsidiary will be designated to be participating in the portion of the Plan that qualifies under Section 423 of the Code.

(k) "Director" means a member of the Board.

(l) "Eligible Employee" means any individual who is a common law employee of an Employer and is customarily employed for more than twenty (20) hours per week and more than five (5) months in any calendar year by the Employer. For purposes of the Plan, the employment relationship will be treated as continuing intact while the individual is on sick leave or other leave of absence that the Employer approves. Where the period of leave exceeds three (3) months and the individual's right to reemployment is not guaranteed either by statute or by contract, the employment relationship will be deemed to have terminated three (3) months and one (1) day following the commencement of such leave. The Administrator, in its discretion, from time to time may, prior to an Offering Date determine (to the extent compliant with the Section 423 of the Code rules regarding equal rights and privileges) that the definition of Eligible Employee will or will not include an individual if he or she: (i) has not completed at least two (2) years of service since his or her last hire date (or such lesser period of time as may be determined by the Administrator in its discretion), (ii) customarily works not more than twenty (20) hours per week (or such lesser period of time as may be determined by the Administrator in its discretion), (iii) customarily works not more than five (5) months per calendar year (or such lesser period of time as may be determined by the Administrator in its discretion), (iv) is an executive, officer or other manager, or (v) is a highly compensated employee under Section 414(q) of the Code. With respect to offerings made under the Non-423 Component of the Plan, the Administrator may limit eligibility further.

(m) "Employer" means any one or all of the Company and its Designated Subsidiaries. With respect to a particular Eligible Employee, Employer means the Company or Designated Subsidiary, as the case may be, that directly employs the Eligible Employee.

(n) "Exchange Act" means the Securities Exchange Act of 1934, as amended, including the rules and regulations promulgated thereunder.

(o) "Exercise Date" means the first Trading Day on or after [February 1] and [August 1] of each year. The first Exercise Date under the Plan will be [February 1, 2016].

(p) "Fair Market Value" means, as of any date and unless the Administrator determines otherwise, the value of Common Stock determined as follows:

(i) If the Common Stock is listed on any established stock exchange or a national market system, including without limitation the New York Stock Exchange, the Nasdaq Global Select Market, the Nasdaq Global Market or the Nasdaq Capital Market of The Nasdaq Stock Market, its Fair Market Value will be the closing sales price for such stock (or the closing bid, if no sales were reported) as quoted on such exchange or system on the date of determination, as reported in *The Wall Street Journal* or such other source as the Administrator deems reliable;

(ii) If the Common Stock is regularly quoted by a recognized securities dealer but selling prices are not reported, its Fair Market Value will be the mean of the closing bid and asked prices for the Common Stock on the date of determination, as reported in *The Wall Street Journal* or such other source as the Administrator deems reliable;

(iii) In the absence of an established market for the Common Stock, the Fair Market Value thereof will be determined in good faith by the Administrator; or

(iv) For purposes of the Offering Date of the first Offering Period under the Plan, the Fair Market Value will be the initial price to the public as set forth in the final prospectus included within the registration statement on Form S-1 filed with the Securities and Exchange Commission for the initial public offering of the Common Stock (the "***Registration Statement***").

(q) "Fiscal Year" means the fiscal year of the Company.

(r) "New Exercise Date" means a new Exercise Date set by shortening any Offering Period then in progress.

(s) "Offering Date" means the first Trading Day of each Offering Period.

(t) "Offering Periods" means the periods of approximately six (6) months during which an option granted pursuant to the Plan may be exercised, (i) commencing on the first Trading Day on or after [February 1] of each year and terminating on the first Trading Day on or following [August 1], approximately six (6) months later, and (ii) commencing on the first Trading Day on or after [August 1] of each year and terminating on the first Trading Day on or following [February 1], approximately six (6) months later; provided, however, that the first Offering Period under the Plan will commence with the first Trading Day on or after the date on which the Securities and Exchange Commission declares the Company's Registration Statement effective and will end on [February 1, 2016]. The duration and timing of Offering Periods may be changed pursuant to Sections 4 and 21.

(u) "Parent" means any corporation (other than the Company) in an unbroken chain of corporations ending with the Company if each of the corporations other than the Company owns stock possessing fifty percent (50%) or more of the total combined voting power of all classes of stock in one of the other corporations in such chain. A corporation that attains the status of a Parent on a date after the adoption of the Plan shall be considered a Parent commencing as of such date.

(v) "Participant" means an Eligible Employee who participates in the Plan.

(w) "Plan" means this Arcadia Biosciences, Inc. 2015 Employee Stock Purchase Plan.

(x) "Purchase Price" means an amount equal to eighty-five percent (85%) of the Fair Market Value of a share of Common Stock on the Offering Date or on the Exercise Date, whichever is lower; provided however, that the Purchase Price may be determined for subsequent Offering Periods by the Administrator, in its discretion, subject to compliance with Section 423 of the Code or pursuant to Section 21.

(y) "Subsidiary" means any corporation (other than the Company) in an unbroken chain of corporations beginning with the Company if each of the corporations other than the last corporation in the unbroken chain owns stock possessing fifty percent (50%) or more of the total combined voting power of all classes of stock in one of the other corporations in such chain. A corporation that attains the status of a Subsidiary on a date after the adoption of the Plan shall be considered a Subsidiary commencing as of such date.

(z) "Trading Day" means a day on which the national stock exchange upon which the Common Stock is listed is open for trading.

3. Eligibility.

(a) First Offering Period. Any individual who is an Eligible Employee immediately prior to the first Offering Period will be automatically enrolled in the first Offering Period, but may elect not to participate at any time.

(b) Subsequent Offering Periods. Any Eligible Employee on a given Offering Date subsequent to the first Offering Period will be eligible to participate in the Plan, subject to the requirements of Section 5.

(c) Limitations. Any provisions of the Plan to the contrary notwithstanding, no Eligible Employee will be granted an option under the Plan (i) to the extent that, immediately after the grant, such Eligible Employee (or any other person whose stock would be attributed to such Eligible Employee pursuant to Section 424(d) of the Code) would own capital stock of the Company or any Parent or Subsidiary of the Company and/or hold outstanding options to purchase such stock possessing five percent (5%) or more of the total combined voting power or value of all classes of the capital stock of the Company or of any Parent or Subsidiary of the Company, or (ii) to the extent that his or her rights to purchase stock under all employee stock purchase plans (as defined in Section 423 of the Code) of the Company or any Parent or Subsidiary of the Company accrues at a rate which exceeds twenty-five thousand dollars ($25,000) worth of stock (determined at the Fair Market Value of the stock at the time such option is granted) for each calendar year in which such option is outstanding at any time.

4. Offering Periods. The Plan will be implemented by consecutive Offering Periods with a new Offering Period commencing on the first Trading Day on or after [February 1] and [August 1] each year, or on such other date as the Administrator will determine; provided, however, that the first Offering Period under the Plan will commence with the first Trading Day on or after the

date upon which the Company's Registration Statement is declared effective by the Securities and Exchange Commission and end on [February 1, 2016]. The Administrator will have the power to change the duration of Offering Periods (including the commencement dates thereof) with respect to future offerings without stockholder approval if such change is announced prior to the scheduled beginning of the first Offering Period to be affected thereafter.

5. Participation.

(a) First Offering Period. An Eligible Employee will be entitled to continue to participate in the first Offering Period pursuant to Section 3(a) only if such individual submits a subscription agreement authorizing payroll deductions in a form determined by the Administrator (which may be similar to the form attached hereto as Exhibit A) to the Company's designated plan administrator (i) no earlier than the effective date of the Form S-8 registration statement with respect to the issuance of Common Stock under this Plan and (ii) no later than ten (10) business days following the effective date of such S-8 registration statement or such other period of time as the Administrator may determine (the "***Enrollment Window***"). An Eligible Employee's failure to submit the subscription agreement during the Enrollment Window will result in the automatic termination of such individual's participation in the first Offering Period.

(b) Subsequent Offering Periods. An Eligible Employee may participate in the Plan pursuant to Section 3(b) by (i) submitting to the Company's payroll office (or its designee), on or before a date prescribed by the Administrator prior to an applicable Offering Date, a properly completed subscription agreement authorizing payroll deductions in the form provided by the Administrator for such purpose, or (ii) following an electronic or other enrollment procedure prescribed by the Administrator.

6. Payroll Deductions.

(a) At the time a Participant enrolls in the Plan pursuant to Section 5, he or she will elect to have payroll deductions made on each pay day during the Offering Period in an amount not exceeding fifteen percent (15%) of the Compensation which he or she receives on each pay day during the Offering Period; provided, however, that should a pay day occur on an Exercise Date, a Participant will have the payroll deductions made on such day applied to his or her account under the subsequent Offering Period. A Participant's subscription agreement will remain in effect for successive Offering Periods unless terminated as provided in Section 11 hereof.

(b) Payroll deductions for a Participant will commence on the first pay day following the Offering Date and will end on the last pay day prior to the Exercise Date of such Offering Period to which such authorization is applicable, unless sooner terminated by the Participant as provided in Section 11 hereof; provided, however, that for the first Offering Period, payroll deductions will commence on the first pay day on or following the end of the Enrollment Window.

(c) All payroll deductions made for a Participant will be credited to his or her account under the Plan (which will be recorded by the Company or Designated Subsidiary on its books, but not be an externally held account unless required under Applicable Law) and will be

withheld in whole percentages only. A Participant may not make any additional payments into such account, subject to the exception set forth below in Section 6(f) below.

(d) A Participant may discontinue his or her participation in the Plan as provided in Section 11. If permitted by the Administrator, as determined in its sole discretion, for an Offering Period, a Participant may increase or decrease the rate of his or her payroll deductions during the Offering Period by (i) properly completing and submitting to the Company's payroll office (or its designee), on or before a date prescribed by the Administrator prior to an applicable Exercise Date, a new subscription agreement authorizing the change in payroll deduction rate in the form provided by the Administrator for such purpose, or (ii) following an electronic or other procedure prescribed by the Administrator. If a Participant has not followed such procedures to change the rate of payroll deductions, the rate of his or her payroll deductions will continue at the originally elected rate throughout the Offering Period and future Offering Periods (unless terminated as provided in Section 11). The Administrator may, in its sole discretion, limit the nature and/or number of payroll deduction rate changes that may be made by Participants during any Offering Period. Any change in payroll deduction rate made pursuant to this Section 6(d) will be effective as of the first full payroll period following five (5) business days after the date on which the change is made by the Participant (unless the Administrator, in its sole discretion, elects to process a given change in payroll deduction rate more quickly).

(e) Notwithstanding the foregoing, to the extent necessary to comply with Section 423(b)(8) of the Code and Section 3(c), a Participant's payroll deductions may be decreased to zero percent (0%) at any time during an Offering Period. Subject to Section 423(b)(8) of the Code and Section 3(c) hereof, payroll deductions will recommence at the rate originally elected by the Participant effective as of the beginning of the first Offering Period which is scheduled to end in the following calendar year, unless terminated by the Participant as provided in Section 11.

(f) If there are countries outside the United States in which payroll deductions for Plan participation are not permitted under Applicable Law, the Administrator may allow Eligible Employees to participate by remitting payment to the Company or Designated Subsidiary by check, wire transfer or other feasible means, and shall determine procedures for facilitating participation in the Plan.

7. Tax Withholding. At the time the option is exercised, in whole or in part, or at the time some or all of the Common Stock issued under the Plan is disposed of, the Participant must make adequate provision for the Company's or Employer's federal, state, foreign or any other tax or social insurance contribution liability payable to any authority, national insurance, social security or other tax withholding obligations, if any, which arise upon the exercise of the option or the disposition of the Common Stock. At any time, the Company or the Employer may, but will not be obligated to, withhold from the Participant's compensation the amount necessary for the Company or the Employer to meet applicable withholding obligations, including any withholding required to make available to the Company or the Employer any tax deductions or benefits attributable to sale or early disposition of Common Stock by the Eligible Employee. Alternatively, the Company may refuse to release Shares purchased until the Eligible Employee satisfies the required tax withholding obligations.

8. Grant of Option. On the Offering Date of each Offering Period, each Eligible Employee participating in such Offering Period will be granted an option to purchase on each Exercise Date with respect to an Offering Period (at the applicable Purchase Price) up to a number of shares of Common Stock determined by dividing such Eligible Employee's payroll deductions accumulated prior to such Exercise Date and retained in the Eligible Employee's account as of the Exercise Date by the applicable Purchase Price; provided that in no event will an Eligible Employee be permitted to purchase during each Offering Period more than three thousand (3,000) shares of the Common Stock (subject to any adjustment pursuant to Section 20), and provided further that such purchase will be subject to the limitations set forth in Sections 3(c) and 14. The Eligible Employee may accept the grant of such option with respect to the first Offering Period by submitting a properly completed subscription agreement in accordance with the requirements of Section 5(a) on or before the last day of the Enrollment Window, and (ii) with respect to any future Offering Period under the Plan, by electing to participate in the Plan in accordance with the requirements of Section 5(b). The Administrator may, for future Offering Periods, increase or decrease, in its absolute discretion (but in accordance with Section 423 of the Code), the maximum number of shares of Common Stock that an Eligible Employee may purchase during each Offering Period. Exercise of the option will occur as provided in Section 9, unless the Participant has withdrawn pursuant to Section 11. The option will expire on the last day of the Offering Period.

9. Exercise of Option.

(a) Unless a Participant withdraws from the Plan as provided in Section 11, his or her option for the purchase of shares of Common Stock will be exercised automatically on the Exercise Date, and the maximum number of full shares subject to the option will be purchased for such Participant at the applicable Purchase Price with the accumulated payroll deductions in his or her account. No fractional shares of Common Stock will be purchased; any payroll deductions accumulated in a Participant's account, which are not sufficient to purchase a full share will be retained in the Participant's account for the subsequent Offering Period, subject to earlier withdrawal by the Participant as provided in Section 11. Any other funds left over in a Participant's account after the Exercise Date will be returned to the Participant. During a Participant's lifetime, a Participant's option to purchase shares hereunder is exercisable only by him or her.

(b) If the Administrator determines that, on a given Exercise Date, the number of shares of Common Stock with respect to which options are to be exercised may exceed (i) the number of shares of Common Stock that were available for sale under the Plan on the Offering Date of the applicable Offering Period, or (ii) the number of shares of Common Stock available for sale under the Plan on such Exercise Date, the Administrator may in its sole discretion provide that the Company will make a pro rata allocation of the shares of Common Stock available for purchase on such Offering Date or Exercise Date, as applicable, in as uniform a manner as will be practicable and as it will determine in its sole discretion to be equitable among all Participants exercising options to purchase Common Stock on such Exercise Date, and continue all Offering Periods then in effect or terminate all Offering Periods then in effect pursuant to Section 21. The Company may make a pro rata allocation of the shares available on the Offering Date of any applicable Offering Period pursuant to the preceding sentence, notwithstanding any authorization of additional shares for issuance under the Plan by the Company's stockholders subsequent to such Offering Date.

10. Delivery. As soon as reasonably practicable after each Exercise Date on which a purchase of shares of Common Stock occurs, the Company will arrange the delivery to each Participant of the shares purchased upon exercise of his or her option in a form determined by the Administrator (in its sole discretion) and pursuant to rules established by the Administrator. The Company may permit or require that shares be deposited directly with a broker designated by the Company or to a designated agent of the Company, and the Company may utilize electronic or automated methods of share transfer. The Company may require that shares be retained with such broker or agent for a designated period of time and/or may establish other procedures to permit tracking of disqualifying

dispositions of such shares. No Participant will have any voting, dividend, or other stockholder rights with respect to shares of Common Stock subject to any option granted under the Plan until such shares have been purchased and delivered to the Participant as provided in this Section 10.

11. Withdrawal.

(a) A Participant may withdraw all but not less than all the payroll deductions credited to his or her account and not yet used to exercise his or her option under the Plan at any time by (i) submitting to the Company's payroll office (or its designee) a written notice of withdrawal in the form prescribed by the Administrator for such purpose (which may be similar to the form attached hereto as Exhibit B), or (ii) following an electronic or other withdrawal procedure prescribed by the Administrator. All of the Participant's payroll deductions credited to his or her account will be paid to such Participant promptly after receipt of notice of withdrawal and such Participant's option for the Offering Period will be automatically terminated, and no further payroll deductions for the purchase of shares will be made for such Offering Period. If a Participant withdraws from an Offering Period, payroll deductions will not resume at the beginning of the succeeding Offering Period, unless the Participant re-enrolls in the Plan in accordance with the provisions of Section 5.

(b) A Participant's withdrawal from an Offering Period will not have any effect upon his or her eligibility to participate in any similar plan which may hereafter be adopted by the Company or in succeeding Offering Periods, which commence after the termination of the Offering Period from which the Participant withdraws.

12. Termination of Employment. Upon a Participant's ceasing to be an Eligible Employee, for any reason, he or she will be deemed to have elected to withdraw from the Plan and the payroll deductions credited to such Participant's account during the Offering Period but not yet used to purchase shares of Common Stock under the Plan will be returned to such Participant or, in the case of his or her death, to the person or persons entitled thereto under Section 16, and such Participant's option will be automatically terminated.

13. Interest. No interest will accrue on the payroll deductions of a Participant in the Plan, unless legally required in any foreign country in which the Plan is offered and such term does not violate the requirements of Section 423 of the Code.

14. Stock.

(a) Subject to adjustment upon changes in capitalization of the Company as provided in Section 20 hereof, the maximum number of shares of Common Stock which will be made available for sale under the Plan will be [1.5% of shares outstanding post-IPO] shares, plus an annual increase to be added on the first day of each Fiscal Year beginning with the 2016 Fiscal Year, equal to the least of (i) [ ] shares of Common Stock, (ii) one percent (1%) of the outstanding shares of Common Stock on such date, or (iii) an amount determined by the Administrator. All of these Shares may be issued under the offerings made under the Plan that comply with the requirements of Section 423 of the Code.

(b) Until the shares are issued (as evidenced by the appropriate entry on the books of the Company or of a duly authorized transfer agent of the Company), a Participant will only have the rights of an unsecured creditor with respect to such shares, and no right to vote or receive dividends or any other rights as a stockholder will exist with respect to such shares.

(c) Shares of Common Stock to be delivered to a Participant under the Plan will be registered in the name of the Participant or in the name of the Participant and his or her spouse.

15. Administration. The Plan will be administered by the Board or a Committee appointed by the Board, which Committee will be constituted to comply with Applicable Laws. The Administrator will have full and exclusive discretionary authority to construe, interpret and apply the terms of the Plan, to determine eligibility and to adjudicate all disputed claims filed under the Plan. Every finding, decision and determination made by the Administrator will, to the full extent permitted by law, be final and binding upon all parties. Notwithstanding any provision to the contrary in this Plan, the Administrator may adopt rules or procedures relating to the operation and administration of the Plan to accommodate the specific requirements of local laws and procedures for jurisdictions outside of the United States. Without limiting the generality of the foregoing, the Administrator is specifically authorized to adopt rules and procedures regarding eligibility to participate, the definition of Compensation, handling of payroll deductions, making of contributions to the Plan (including, without limitation, in forms other than payroll deductions), establishment of bank or trust accounts to hold payroll deductions, payment of interest, conversion of local currency, obligations to pay payroll tax, determination of beneficiary designation requirements, withholding procedures and handling of stock certificates, which vary with local requirements.

16. Designation of Beneficiary.

(a) The Administrator may allow a Participant to file a designation of a beneficiary who is to receive any shares of Common Stock and cash, if any, from the Participant's account under the Plan in the event of such Participant's death subsequent to an Exercise Date on which the option is exercised but prior to delivery to such Participant of such shares and cash. In addition, the Administrator may allow a Participant to file a designation of a beneficiary who is to receive any cash from the Participant's account under the Plan in the event of such Participant's death prior to exercise of the option. If a Participant is married and the designated beneficiary is not the spouse, spousal consent will be required for such designation to be effective in the United States or to the extent required by Applicable Law.

(b) If made, such designation of beneficiary may be changed by the Participant at any time by notice in a form determined by the Administrator. In the event of the death of a Participant and in the absence of a beneficiary validly designated under the Plan who is living at the time of such Participant's death, the Company will deliver such shares and/or cash to the executor or administrator of the estate of the Participant, or if no such executor or administrator has been appointed (to the knowledge of the Company), the Company, in its discretion, may deliver such shares and/or cash to the spouse or to any one or more dependents or relatives of the Participant, or if no spouse, dependent or relative is known to the Company, then to such other person as the Company may designate.

(c) All beneficiary designations will be in such form and manner as the Administrator may designate from time to time.

17. Transferability. Neither payroll deductions credited to a Participant's account nor any rights with regard to the exercise of an option or to receive shares of Common Stock under the Plan may be assigned, transferred, pledged or otherwise disposed of in any way (other than by will, the laws of descent and distribution or as provided in Section 16 hereof) by the Participant. Any such attempt at assignment, transfer, pledge or other disposition will be without effect, except that the Company may treat such act as an election to withdraw funds from an Offering Period in accordance with Section 11 hereof.

18. Use of Funds. The Company may use all payroll deductions received or held by it under the Plan for any corporate purpose, and the Company will not be obligated to segregate such payroll deductions, unless and to the extent legally required in any foreign country in which the Plan is offered. Until shares of Common Stock are issued, Participants will only have the rights of an unsecured creditor with respect to such shares.

19. Reports. Individual accounts will be maintained for each Participant in the Plan. Statements of account will be given to participating Eligible Employees at least annually, which statements will set forth the amounts of payroll deductions, the Purchase Price, the number of shares of Common Stock purchased and the remaining cash balance, if any.

20. Adjustments, Dissolution, Liquidation, Merger or Change in Control.

(a) Adjustments. In the event of a stock split, reverse stock split, stock dividend, combination, consolidation, recapitalization (including a recapitalization through a large nonrecurring cash dividend) or reclassification of the Shares, subdivision of the Shares, a rights offering, a reorganization, merger, spin-off, split-up, repurchase, or exchange of Common Stock or other securities of the Company or other significant corporate transaction, or other change affecting the Common Stock occurs, the Administrator, in order to prevent dilution or enlargement of the benefits or potential benefits intended to be made available under the Plan, will, in such manner as it may deem equitable, adjust the number, kind and class of Common Stock that may be delivered under the Plan, the Purchase Price per share and the number of shares of Common Stock covered by each option under the Plan which has not yet been exercised, and the numerical limits of Sections 8 and 14. Notwithstanding the forgoing, all adjustments under this Section 20 shall be made in a manner that does not result in taxation under Code Section 409A.

(b) Dissolution or Liquidation. In the event of the proposed winding up, dissolution or liquidation of the Company, any Offering Period then in progress will be shortened by setting a New Exercise Date, and will terminate immediately prior to the consummation of such proposed dissolution or liquidation, unless provided otherwise by the Administrator. The New Exercise Date will be before the date of the Company's proposed dissolution or liquidation. The Administrator will notify each Participant in writing, prior to the New Exercise Date, that the Exercise Date for the Participant's option has been changed to the New Exercise Date and that the Participant's option will be exercised automatically on the New Exercise Date, unless prior to such date the Participant has withdrawn from the Offering Period as provided in Section 11 hereof.

(c) Merger or Change in Control. In the event of a merger or Change in Control (other than a winding up, dissolution or liquidation), each outstanding option will be assumed or an equivalent option substituted by the successor corporation or a Parent or Subsidiary of the successor corporation. In the event that the successor corporation refuses to assume or substitute for the option, the Offering Period with respect to which such option relates will be shortened by setting a New Exercise Date and will end on the New Exercise Date. The New Exercise Date will occur before the date of the Company's proposed merger or Change in Control. The Administrator will notify each Participant in writing prior to the New Exercise Date, that the Exercise Date for the Participant's option has been changed to the New Exercise Date and that the Participant's option will be exercised automatically on the New Exercise Date, unless prior to such date the Participant has withdrawn from the Offering Period as provided in Section 11 hereof.

21. Amendment or Termination.

(a) The Administrator, in its sole discretion, may amend, suspend, or terminate the Plan, or any part thereof, at any time and for any reason. If the Plan is terminated, the Administrator, in its discretion, may elect to terminate all outstanding Offering Periods either immediately or upon completion of the purchase of shares of Common Stock on the next Exercise Date (which may be sooner than originally scheduled, if determined by the Administrator in its discretion), or may elect to permit Offering Periods to expire in accordance with their terms (and subject to any adjustment pursuant to Section 20). If the Offering Periods are terminated prior to expiration, all amounts then credited to Participants' accounts which have not been used to purchase shares of Common Stock will be returned to the Participants (without interest thereon, except as otherwise required under local laws) as soon as administratively practicable.

(b) Without stockholder consent and without limiting Section 21(a), the Administrator will be entitled to change the Offering Periods, limit the frequency and/or number of changes in the amount withheld during an Offering Period, establish the exchange ratio applicable to amounts withheld in a currency other than U.S. dollars, permit payroll withholding in excess of the amount designated by a Participant in order to adjust for delays or mistakes in the Company's processing of properly completed withholding elections, establish reasonable waiting and adjustment periods and/or accounting and crediting procedures to ensure that amounts applied toward the purchase of Common Stock for each Participant properly correspond with amounts withheld from the Participant's Compensation, and establish such other limitations or procedures as the Administrator determines in its sole discretion advisable which are consistent with the Plan and Section 423 of the Code.

(c) In the event the Administrator determines that the ongoing operation of the Plan may result in unfavorable financial accounting consequences, the Administrator may, in its discretion and, to the extent necessary or desirable, modify, amend or terminate the Plan to reduce or eliminate such accounting consequence including, but not limited to:

(i) amending the Plan to conform with the safe harbor definition under Financial Accounting Standards Board Accounting Standards Codification Topic 718, including with respect to an Offering Period underway at the time;

(ii) altering the Purchase Price for any Offering Period including an Offering Period underway at the time of the change in Purchase Price;

(iii) shortening any Offering Period by setting a New Exercise Date, including an Offering Period underway at the time of the Administrator action;

(iv) reducing the maximum percentage of Compensation a Participant may elect to set aside as payroll deductions; and

(v) reducing the maximum number of Shares a Participant may purchase during any Offering Period.

Such modifications or amendments will not require stockholder approval or the consent of any Plan Participants.

22. Notices. All notices or other communications by a Participant to the Company under or in connection with the Plan will be deemed to have been duly given when received in the form and manner specified by the Company at the location, or by the person, designated by the Company for the receipt thereof.

23. Conditions Upon Issuance of Shares. Shares of Common Stock will not be issued with respect to an option unless the exercise of such option and the issuance and delivery of such shares pursuant thereto will comply with all applicable provisions of law, domestic or foreign, including, without limitation, the Securities Act of 1933, as amended, the Exchange Act, the rules and regulations promulgated thereunder, and the requirements of any stock exchange upon which the shares may then be listed, and will be further subject to the approval of counsel for the Company with respect to such compliance.

As a condition to the exercise of an option, the Company may require the person exercising such option to represent and warrant at the time of any such exercise that the shares are being purchased only for investment and without any present intention to sell or distribute such shares if, in the opinion of counsel for the Company, such a representation is required by any of the aforementioned applicable provisions of law.

24. Term of Plan. The Plan will become effective upon the earlier to occur of its adoption by the Board or its approval by the stockholders of the Company. It will continue in effect for a term of ten (10) years, unless sooner terminated under Section 21.

25. Stockholder Approval. The Plan will be subject to approval by the stockholders of the Company within twelve (12) months after the date the Plan is adopted by the Board. Such stockholder approval will be obtained in the manner and to the degree required under Applicable Laws.

26. Governing Law. The Plan and all Awards hereunder shall be construed in accordance with and governed by the laws of the State of Delaware, but without regard to its conflict of law provisions.

EXHIBIT A

ARCADIA BIOSCIENCES, INC.

2015 EMPLOYEE STOCK PURCHASE PLAN

SUBSCRIPTION AGREEMENT

ARCADIA BIOSCIENCES, INC.

2015 EMPLOYEE STOCK PURCHASE PLAN

SUBSCRIPTION AGREEMENT

Original Application
Change in Payroll Deduction Rate
Change of Beneficiary(ies)

Offering Date: _____

1. I, hereby elect to participate in the Arcadia Biosciences, Inc. 2015 Employee Stock Purchase Plan (the "***Plan***") and subscribe to purchase shares of the Company's Common Stock in accordance with this Subscription Agreement and the Plan.

2. I hereby authorize payroll deductions from each paycheck in the amount of % of my Compensation on each payday (from 0 to 15%) during the Offering Period in accordance with the Plan. (Please note that no fractional percentages are permitted and will be rounded down to the nearest whole percent.)

3. I understand that such payroll deductions will be accumulated for the purchase of shares of Common Stock at the applicable Purchase Price determined in accordance with the Plan. I understand that if I do not withdraw from an Offering Period, any accumulated payroll deductions will be used to automatically exercise my option and purchase Common Stock under the Plan.

4. I have received a copy of the complete Plan and its accompanying prospectus. I understand that my participation in the Plan is in all respects subject to the terms of the Plan. Any conflict between this Subscription Agreement and the Plan will be resolved in favor of the Plan.

5. I understand that if I dispose of any shares received by me pursuant to the Plan either within two (2) years after the Offering Date (the first day of the Offering Period during which I purchased such shares) or one (1) year after the Exercise Date, I will be treated for federal income tax purposes as having received ordinary income at the time of such disposition in an amount equal to the excess of the fair market value of the shares at the time such shares were purchased by me over the price which I paid for the shares. I hereby agree to notify the Company in writing within thirty (30) days after the date of any disposition of my shares and I will make adequate provision for federal, state or other tax withholding obligations, if any, which arise upon the disposition of the Common Stock. The Company may, but will not be obligated to, withhold from my compensation the amount necessary to meet any applicable withholding obligation including any withholding necessary to make available to the Company any tax deductions or benefits attributable to sale or early disposition of Common Stock by me. If I dispose of such shares at any time after the expiration of both the two (2)-year and one (1)-year holding periods, I understand that I will be treated for federal income tax purposes as having received income only at the time of such disposition, and that such income will be taxed as ordinary

income only to the extent of an amount equal to the lesser of (a) the excess of the fair market value of the shares at the time of such disposition over the purchase price which I paid for the shares, or (b) fifteen percent (15%) of the

---

fair market value of the shares on the first trading day of the Offering Period. The remainder of the gain, if any, recognized on such disposition will be taxed as capital gain.

6. I hereby agree to be bound by the terms of the Plan. The effectiveness of this Subscription Agreement is dependent upon my eligibility to participate in the Plan.

In the event of my death, I hereby designate the following as my beneficiary to receive all payments and shares due me under the Plan:

NAME OF BENEFICIARY: (Please print)

_____
(First) (Middle) (Last)

_____
Relationship

_____
(Address)

PERSONAL INFORMATION: (Please print)

Employee's Social
Security Number: _____

Employee's Address:

_____

I UNDERSTAND THAT THIS SUBSCRIPTION AGREEMENT SHALL REMAIN IN EFFECT THROUGHOUT SUCCESSIVE OFFERING PERIODS UNLESS TERMINATED BY ME.

_____ _____
Signature of Employee Date

_____ _____
Spouse's Signature (If beneficiary other than spouse) Date

EXHIBIT B

ARCADIA BIOSCIENCES, INC.

2015 EMPLOYEE STOCK PURCHASE PLAN

NOTICE OF WITHDRAWAL

The undersigned Participant in the Offering Period of the Arcadia Biosciences, Inc. 2015 Employee Stock Purchase Plan that began on _____, _____ (the "***Offering Date***") hereby notifies the Company that he or she hereby withdraws from the Offering Period. He or she hereby directs the Company to pay to the undersigned as promptly as practicable all the payroll deductions credited to his or her account with respect to such Offering Period. The undersigned understands and agrees that his or her option for such Offering Period will be automatically terminated. The undersigned understands further that no further payroll deductions will be made for the purchase of shares in the current Offering Period and the undersigned will be eligible to participate in succeeding Offering Periods only by delivering to the Company a new Subscription Agreement.

Name and Address of Participant:

_____

_____

_____

Signature:

_____

Date: _____

Exhibit 10.11

TERM LOAN AGREEMENT

This TERM LOAN AGREEMENT, dated as of July 23, 2012 (this "Agreement"), is between Arcadia Biosciences, Inc., an Arizona corporation (the "Borrower"), and Moral Compass Corporation, a Delaware corporation (the "Lender").

ARTICLE I
DEFINITIONS AND ACCOUNTING TERMS

SECTION 1.01. Certain Defined Terms. As used in this Agreement, the following terms shall have the following meanings (such meanings to be equally applicable to both the singular and plural forms of the terms defined):

"Base Rate" means, for any interest period or other period, a fluctuating interest rate per annum as shall be in effect on the first day of the calendar month for which interest due shall be calculated, which rate per annum shall at all times be equal to the current prime rate of interest published by the Wall Street Journal from time to time.

"Business Day" means a day of the year on which banks are not required or authorized to close in Arizona.

"Closing Date" means the date of execution of this Agreement

"Debt" means (i) indebtedness for borrowed money, (ii) obligations evidenced by bonds, debentures, notes or other similar instruments, (iii) obligations to pay the deferred purchase price of property or services, which, by their terms, are due and payable more than 90 days after the incurrence thereof, (iv) obligations as lessee under leases which shall have been or should be, in accordance with generally accepted accounting principles, recorded as capital leases, (v) all obligations or liabilities of others secured by a lien on any asset owned by such Person, whether or not such obligation or liability is assumed; (vi) all obligations of such Person, contingent or otherwise, in respect of any letters of credit, bankers' acceptances similar instruments and (vii) obligations under direct or indirect guaranties in respect of, and obligations (contingent or otherwise) to purchase or otherwise acquire, or otherwise to assure a creditor against loss in respect of, indebtedness or obligations of others of the kinds referred to in clauses (i) through (vi) above.

"Default" means any event that would constitute an Event of Default but for the requirement that notice be given or lapse of time or both.

"Event of Default" has the meaning specified in Section 7.01.

"Interest Rate" means the Base Rate plus two percent (2%).

"Loan" means the loan by the Lender to the Borrower pursuant to Section 2.01.

"Loan Documents" means this Agreement, promissory notes, security agreements and other documents effectuating the purpose of this Agreement, in each case as the same may hereinafter be amended, modified, supplemented, renewed, extended or consolidated (including, without limitation, increases and decreases in the amounts owing or secured thereunder).

"Person" means an individual, partnership, corporation (including a business trust), joint stock company, trust, unincorporated association, joint venture or other entity, or a government or any political subdivision or agency thereof.

"Principal Amount" means Eight Million Dollars ($8,000,000).

"Maturity Date" means the third (3rd) anniversary of the date of this Agreement or the earlier date of an Event of Default.

SECTION 1.02. Computation of Time Periods. In this Agreement, in the computation of periods of time from a specified date to a later specified date, unless otherwise expressly provided, the word "from" means "from and including" and the words "to" and "until" each means "to but excluding."

SECTION 1.03. Accounting Terms. All accounting terms not specifically defined herein shall be construed in accordance with generally accepted accounting principles.

ARTICLE II
AMOUNT AND TERMS OF THE LOAN

SECTION 2.01. The Loan. Upon the terms and conditions hereinafter set forth, the Lender hereby loans to the Borrower and the Borrower hereby borrows from the Lender the Principal Amount ("Loan"). Borrower hereby acknowledges receipt of the Principal Amount simultaneously with execution hereof.

SECTION 2.02. Repayment.

(a) The Borrower shall repay the Principal Amount on the Maturity Date.

(b) All principal, interest and other amounts due in connection with the Loan shall be paid in full no later than the Maturity Date.

SECTION 2.04. Interest on Principal Amount. The Borrower shall pay interest on the Principal Amount until such Principal Amount shall be paid in full, monthly in arrears, and on the other dates set forth in this Article II, at a rate per annum equal to the Interest Rate.

SECTION 2.05. Default Interest. The Borrower shall pay interest (i) on the unpaid Principal Amount that is not paid when due, payable on demand, at a rate per annum equal at all times to 5.0% per annum above the rate that was in effect for such Principal Amount in accordance with Section 2.04, on the date that such amount was due and (ii) on the unpaid amount of all interest, fees and other amounts payable hereunder that is not paid within five (5) days of the date when due, payable on demand, at a rate per annum equal at all times to 2.0% per annum above the Interest Rate in effect from time to time.

SECTION 2.06. Prepayment Fees. At Borrower's election, this Loan shall be pre-payable by Borrower at any time, in whole or in part, subject to the following prepayment fees payable from Borrower to Lender on the date of the prepayment ("Prepayment Fees"): (a) three percent (3%) of the prepaid amount if the prepayment occurs on or prior to the first anniversary of the date hereof; (b) two percent (2%) of the prepaid amount if the prepayment occurs after the first anniversary hereof and on or prior to the second anniversary hereof; and (c) one percent (1%) of the prepaid amount if the prepayment occurs after the second anniversary hereof and on or prior to the Maturity Date. Lender has no obligation whatsoever to make further borrowings available to the Borrower, whether following a prepayment or otherwise.

SECTION 2.07. Payments and Computations.

(a) The Borrower shall make each payment hereunder not later than 10:00 a.m. (Arizona time) on the day when due in U.S. dollars to the Lender at its address referred to in Section 8.03 in same day funds.

(b) All computations of interest for a particular month or other period shall be made by the Lender on the basis of the Base Rate divided by 365 or 366 days, as the case may be for the particular calendar year.

(c) Whenever any payment hereunder shall be stated to be due on a day other than a Business Day, such payment shall be made on the next succeeding Business Day, and such extension of time shall in such case be included in the computation of payment of interest; provided, however, if such extension would cause payment of interest on or principal of the Loan to be made in the next following calendar month, such payment shall be made on the next preceding Business Day.

SECTION 2.08. Use of Proceeds. The proceeds of the Loan shall be used by the Borrower for working capital.

ARTICLE III
INTENTIONALLY OMITTED

ARTICLE IV
CONDITIONS OF LENDING

SECTION 4.01. Conditions Precedent to Loan. The obligation of the Lender to make the Loan is subject in each case to the conditions precedent that the Lender shall have received, on or before the Closing Date, the following, each dated (except as indicated otherwise by the Lender) the Closing Date, in form and substance satisfactory to the Lender:

(a) A copy of the board of directors' resolutions of the Borrower approving or ratifying the execution, delivery and performance of this Agreement and the Loan Documents.

(b) A certificate of the Secretary of the Borrower certifying that the Certificate of Incorporation and Bylaws of the Borrower and the foregoing resolutions are all in full force and effect.

(c) A certificate of the Secretary of the Borrower certifying the identity and signature of the officer of the Borrower who has executed this Agreement and any other Loan Documents and that such person is authorized to enact legally binding transactions on behalf of the Borrower.

(d) Such other documents, reports, opinions and information as the Lender shall have reasonably requested.

ARTICLE V
REPRESENTATIONS AND WARRANTIES

SECTION 5.01. Representations and Warranties of the Borrower. The Borrower represents and warrants as follows:

(a) The Borrower is a corporation duly organized, validly existing and in good standing under the laws of the State of Arizona.

(b) The execution, delivery and performance by the Borrower of this Agreement and each other Loan Document to which it is or will be a party are within the

Borrower's corporate powers, have been duly authorized by all necessary corporate action, and do not contravene (i) the Borrower's Certificate of Incorporation, Bylaws or other governance documents or (ii) any law or any contractual restriction binding on or affecting the Borrower or any of its properties, and do not result in or require the creation of any lien, security interest or other charge or encumbrance upon or with respect to any of its properties.

(c) No authorization or approval or other action by, and no notice to or filing with, any governmental authority or regulatory body is required by the Borrower for the due execution, delivery and performance by the Borrower of this Agreement or any other Loan Document to which it is or will be a party.

(d) This Agreement and each other Loan Document to which the Borrower is or will be a party when delivered hereunder will be, legal, valid and binding obligations of the Borrower enforceable against the Borrower in accordance with their respective terms.

(e) The balance sheet of the Borrower as at December 31, 2011 and the related statements of income, cash flow and capital of the Borrower for the periods then ended, copies of which have been furnished to the Lender, fairly present the financial condition of the Borrower as at such dates and the results of the operations of the Borrower for the periods ended on such dates, and since December 31, 2011 there has been no material adverse change in such condition or operations.

(f) The Borrower's resolutions have been duly adopted, are accurate and correct, are in full force and effect and shall continue in full force and effect so long as the Loan is outstanding.

(g) The Borrower has, independently and without reliance as to any matter upon the Lender, and based upon such documents and information as it has deemed appropriate, made its own credit analysis and credit decision to enter into this Agreement and the other Loan Documents.

(h) No proceeds of the Loan will be used to acquire any equity security of a class which is registered pursuant to Section 12 of the Securities Exchange Act of 1934, as amended, and no proceeds of the Loan will be used to purchase or carry any margin stock or to extend credit to others for the purpose of purchasing or carrying any margin stock.

(i) There is no pending or, to the best of the Borrower's knowledge, threatened, action or proceeding affecting the Borrower, any of its shareholders or employees or any of its properties before any court, governmental agency or arbitrator (x) that is of a type of which the Lender is required to be notified under Section 6.01(d)(iii) or (iv) hereof or (y) that purports to affect the legality, validity or enforceability of this Agreement or any Loan Document to which the Borrower is or will be a party.

(j) Both immediately before and after giving effect to the receipt of the Loan, the Borrower is and will be "solvent" within the meaning, and for the purposes, of the Federal Bankruptcy Code.

(k) No Event of Default or Default has occurred and is continuing.

ARTICLE VI
COVENANTS OF THE BORROWER

SECTION 6.01. Affirmative Covenants. So long as the Loan shall remain unpaid, the Borrower will, unless the Lender shall otherwise consent in writing:

(a) Maintain and preserve its existence and all rights, privileges, franchises and other authority adequate for the conduct of its business; maintain its properties, equipment and facilities in good order and repair (ordinary wear and tear excepted); and conduct its business in an orderly manner without voluntary interruption.

(b) Comply, in all material respects, with all applicable laws, rules, regulations and orders, such compliance to include, without limitation, paying before the same become delinquent all taxes, assessments and governmental charges imposed upon it or upon its property except to the extent contested in good faith.

(c) (i) No later than August 31 of the year after the close of each fiscal year of the Borrower, furnish to the Lender, at the Borrower's expense, audited financial statements of the Borrower, including a balance sheet and profit and loss statement and setting forth comparative figures for the immediately preceding fiscal year, together with a certificate from the Borrower's auditor (which shall be reasonably satisfactory to the Lender) to the effect that such financial statements present fairly the financial condition of the Borrower on the basis of generally accepted accounting principles, consistently applied; and (ii) within 45 days after the close of each of the first three fiscal quarters of the Borrower, furnish to the Lender unreviewed quarterly financial statements of the Borrower (covering the cumulative period from the end of the preceding fiscal year to the end of such fiscal quarter and setting forth comparative figures for the fiscal quarter in the immediately preceding fiscal year corresponding to such fiscal quarter), as prepared by the Borrower for its internal use, including a balance sheet and a profit and loss statement, certified by the Vice President of Finance of the Borrower to present fairly the financial condition of the Borrower and to have been prepared in accordance with generally accepted accounting principles on a basis consistently applied, subject, however, to year-end accounting review adjustments.

(d) Notify the Lender in writing immediately (i) of the occurrence of any Default or Event of Default; (ii) of any material adverse change in the assets, liabilities or financial condition of the Borrower since the most recent date of any financial statements delivered to the Lender; (iii) of any actions, proceedings or litigation pending or, to the best of the Borrower's knowledge, threatened against the Borrower or any of its properties that might result in any material adverse change in the Borrower's financial condition; (iv) of any proposal made by the Borrower in connection with, or any action by the Borrower authorizing (A) any purchase of substantially all of the assets of or of a controlling interest in the Borrower by another entity and/or its equity owners or (B) any merger or consolidation between or among the Borrower and any other entity and/or the equity owners thereof.

(e) Cause all data, certificates, reports, statements, documents and other information required to be furnished to the Lender in connection with this Agreement or the other Loan Documents, at the time the information is so furnished, not to contain any untrue statement of a material fact, to be complete and correct in all material respects, and not to omit to state a material fact necessary in order to make the statements contained therein not misleading in light of the circumstances under which such information is furnished.

(f) Maintain a system of accounting in accordance with sound accounting principles on a basis consistently applied and permit the Lender to have access to and to examine its properties, books and records at all reasonable times upon reasonable notice.

SECTION 6.02. Negative Covenants. So long as any portion of the Loan shall remain unpaid, the Borrower will not, without the written consent of the Lender:

(a) Merge or consolidate with or into, or convey, transfer, lease or otherwise dispose of (whether in one transaction or in a series of transactions) all or substantially all of its assets (whether now owned or hereafter acquired) to, or acquire all or substantially all of the assets of, any Person.

(b) Directly or indirectly, create, incur, assume or suffer to exist any Debt other than (i) Debt to the Lender, or (ii) Debt under capital leases or other similar equipment financing arrangements as long as the outstanding balance of all such leases and financings does not at any time exceed $1,000,000.

(c) Make any loans or other advances of money to any Person in excess of $100,000 with respect to any such Person, or in excess of $500,000 in the aggregate outstanding at any time.

(d) Guarantee or otherwise, in any way, become liable with respect to the obligations or liabilities of any Person which at any time exceed an aggregate amount of $500,000 (or such greater amount agreed upon by the Lender and the Borrower).

(e) Enter into any transaction that materially and adversely affects the Borrower's ability to repay its obligations hereunder or under any Loan Document and any other Debt which the Borrower may owe to the Lender.

(f) Make any dividends or distributions to shareholders.

(g) Change the Borrower's fiscal year end.

ARTICLE VII
EVENTS OF DEFAULT; REMEDIES

SECTION 7.01. Events of Default. If any of the following events ("Events of Default") shall occur and be continuing:

(a) The Borrower shall fail to pay any principal under this Agreement when the same becomes due and payable; or the Borrower shall fail to pay interest on the Loan

or other obligation, or any fee or expenses payable by it hereunder or under any Loan Document, within 5 days after the same become due and payable; or

(b) Any representation or warranty made by the Borrower under or in connection with any Loan Document, or under or in connection with any certificate, notice or document delivered by the Borrower or any of its partners in connection with any Loan Document, shall prove to have been incorrect in any material respect when made; or

(c) The Borrower shall fail to perform or observe any term, covenant or agreement contained in Section 6.01 or Section 6.02 of this Agreement or the Borrower shall fail to perform or observe any other term, covenant or agreement contained in any Loan Document on its part to be performed or observed if such failure shall remain unremedied for 15 days after written notice thereof shall have been given to the Borrower by the Lender or after the Borrower otherwise becomes aware of such failure; or

(d) The Borrower shall fail to pay any principal of or premium or interest on any Debt of the Borrower when the same becomes due and payable (other than any such payments which are the subject of a bona fide, good faith dispute by the Borrower), whether by scheduled maturity, required prepayment, acceleration, demand or otherwise, and such failure shall continue after the applicable grace period, if any, specified in the agreement or instrument relating to such Debt; or any other event shall occur or condition shall exist under any agreement or instrument relating to any such Debt and shall continue after the applicable grace period, if any, specified in such agreement or instrument, if the effect of such event or condition is to accelerate, or to permit the acceleration of, the maturity of such Debt; or any such Debt shall be declared to be due and payable, or required to be prepaid (other than by a regularly scheduled required prepayment), redeemed, purchased or defeased, or an offer to prepay, redeem, purchase or defease such Debt shall be required to be made, in each case prior to the state maturity thereof; or

(e) The Borrower shall generally not pay its debts as such debts become due, or shall admit in writing its inability to pay its debts generally, or shall make a general assignment for the benefit of creditors; or any proceeding shall be instituted by or against the Borrower seeking to adjudicate it bankrupt or insolvent, or seeking liquidation, winding up, reorganization, arrangement, adjustment, protection, relief, or composition of it or its debts under any law relating to bankruptcy, insolvency or reorganization or relief of debtors, or seeking the entry of an order for relief or the appointment of a receiver, trustee, custodian or other similar official for it or for any substantial part of its property and, in the case of any such proceeding instituted against it (but not instituted by it), either such proceeding shall remain undismissed or unstayed for a period of 30 days, or any of the actions sought in such proceeding (including, without limitation, the entry of an order for relief against, or the appointment of a receiver, trustee, custodian or other similar official for, it or for any substantial part of its property) shall occur; or the Borrower shall take any action to authorize any of the actions set forth above in this subsection (e); or

(f) Any judgment or order for the payment of money in excess of $250,000 shall be rendered against the Borrower and either (i) enforcement proceedings shall have been commenced by any creditor upon such judgment or order or (ii) there shall be any

period of 10 consecutive days during which a stay of enforcement of such judgment or order, by reason of a pending appeal or otherwise, shall not be in effect; or

(g) Any material provision of any of this Agreement or any of the Loan Documents shall for any reason cease to be valid and binding on the Borrower;

(h) Any event shall occur or condition exist that shall (i) have a material adverse effect upon the financial condition of the Borrower as shown on the financial statements required to be delivered hereunder or otherwise and (ii) materially and adversely impair the Borrower's ability to repay the Loan or perform its obligations hereunder; or

(i) The Borrower shall dissolve;

then, and in any such event, the Lender may declare the Principal Amount, all interest thereon and all other amounts payable under this Agreement (including Prepayment Fees) to be forthwith due and payable, whereupon the Principal Amount, all such interest and all such amounts shall become and be forthwith due and payable, without presentment, demand, protest, or further notice of any kind, all of which are hereby expressly waived by the Borrower.

SECTION 7.02. Remedies. Upon the occurrence and during the continuation of any Event of Default, the Lender may exercise any and all remedies available to it hereunder, under any of the other Loan Documents, at law or in equity. The Lender may apply any amounts so received or recovered to all or any part of the obligations, in such manner and order as the Lender may in its discretion elect.

ARTICLE VIII
MISCELLANEOUS

SECTION 8.01. Amendments. No amendment or waiver of any provision of this Agreement or the other Loan Documents, nor consent to any departure by the Borrower therefrom, shall in any event be effective unless the same shall be in writing and signed by the Lender, and then such waiver or consent shall be effective only in the specific instance and for the specific purpose of which given.

SECTION 8.02. Indemnity.

(a) The Borrower agrees to indemnify, defend and hold harmless the Lender and the officers, directors, employees, agents, attorneys and affiliates of the Lender (the "Indemnitees") from and against all liabilities, losses, damages, penalties, judgments, claims, costs and expenses of any kind or nature whatsoever (including the reasonable fees and disbursements of counsel in connection with any investigative, administrative or judicial proceeding, whether or not such Indemnitee shall be designated a party thereto) that are or may be imposed on, incurred by or asserted against such Indemnitee in connection with, in any manner relating to or arising out of this Agreement or any other Loan Document or the use or intended use of the proceeds of the Loan; provided that no Indemnitee shall have the right to be indemnified or held harmless hereunder for its own gross negligence or willful misconduct as determined by a final non-appealable judgment of a court of competent jurisdiction.

(b) The obligations of the Borrower under this Section 8.02 shall survive the termination of this Agreement and the discharge of the Borrower's other obligations hereunder.

SECTION 8.03. Notices. All notices and other communications provided for hereunder shall be in writing and mailed, telecopied, or delivered personally or by courier, to a party at the address set forth on the signature page hereof, or, as to each party, at such other address as shall be designated by such party in a written notice to the other party. All such notices and communications shall when mailed, telecopied or delivered, be effective when deposited in the mails, telecopied or delivered, respectively.

SECTION 8.04. No Waiver; Remedies. No failure on the part of the Lender to exercise, and no delay in exercising, any right under any Loan Document shall operate as a waiver thereof; nor shall any single or partial exercise of any such right preclude any other or further exercise thereof or the exercise of any other right. The remedies provided in the Loan Documents are cumulative and not exclusive of any remedies provided by law.

SECTION 8.05. Costs, Expenses and Taxes. The Borrower agrees to pay on demand all costs and expenses of the Lender in connection with the preparation, execution, delivery, administration, modification and amendment of the Loan Documents and the other documents to be delivered under the Loan Documents, including, without limitation, the reasonable fees and out-of-pocket expenses of counsel for the Lender with respect thereto and with respect to advising the Lender as to its rights and responsibilities under the Loan Documents (with said Lender's counsel fees and costs not to exceed $15,000). The Borrower further agrees to pay on demand all costs and expenses, if any (including, without limitation, reasonable counsel fees and expenses), of the Lender in connection with the enforcement (whether through negotiations, legal proceedings or otherwise) of the Loan Documents and the other certificates or documents to be delivered under the Loan Documents, including, without limitation, reasonable counsel fees and expenses in connection with the enforcement of rights under this Section 8.05. In addition, the Borrower shall pay any and all stamp and other taxes payable or determined to be payable in connection with the execution, delivery, filing and recording of the Loan Documents and the other documents to be delivered under the Loan Documents, and agrees to save the Lender harmless from and against any all liabilities with respect to or resulting from any delay in paying or omission to pay such taxes. The obligations of the Borrower under this Section 8.05 shall survive the termination of this Agreement and the repayment of the Loan hereunder.

SECTION 8.06. Right of Set-Off. Upon the occurrence and during the continuance of any Event of Default, the Lender is hereby authorized at any time and from time to time, to the fullest extent permitted by law, to set off and apply any other indebtedness at any time owing, by the Lender, to the Borrower against any and all of the obligations of the Borrower now or hereafter existing under any Loan Document, whether or not the Lender shall have made any demand under such Loan Document and although such obligations may be unmatured. The Lender agrees promptly to notify the Borrower after any such set-off and application; provided that the failure to give such notice shall not affect the validity of such set-off and application. The rights of the Lender under this Section are in addition to other rights and remedies (including, without limitation, other rights of set-off) which the Lender may have.

SECTION 8.07. Successors and Assigns. This Agreement shall be binding upon and, subject to the next sentence, inure to the benefit of the parties hereto and their respective successors and assigns. The Borrower may not assign or transfer any interest hereunder without the prior written consent of the Lender. The Lender may assign or otherwise transfer all or any portion of its rights and obligations under this Agreement and the other Loan Documents to any other Person, and such other Person shall thereupon become vested with all the benefits in respect thereof granted to the Lender herein or otherwise (and the Lender shall be released from obligations assumed by such Person).

SECTION 8.08. Execution of Notes. If requested by the Lender from time to time, the Borrower will execute promissory notes on terms reasonably satisfactory to the parties to memorialize the Loan.

SECTION 8.09. GOVERNING LAW. THIS AGREEMENT SHALL BE GOVERNED BY, AND CONSTRUED IN ACCORDANCE WITH, THE LAWS OF THE STATE OF ARIZONA WITHOUT REFERENCE TO PRINCIPLES OF CONFLICTS OF LAWS.

SECTION 8.10. WAIVER OF JURY TRIAL. EACH OF THE PARTIES HEREBY IRREVOCABLY WAIVES ALL RIGHT TO TRIAL BY JURY IN ANY ACTION, PROCEEDING OR COUNTERCLAIM (WHETHER BASED UPON CONTRACT, TORT OR OTHERWISE) ARISING OUT OF OR RELATING TO THIS AGREEMENT OR ANY OTHER LOAN DOCUMENT, OR THE ACTIONS OF THE OTHER PARTY IN THE NEGOTIATION, ADMINISTRATION, PERFORMANCE OR ENFORCEMENT THEREOF.

SECTION 8.11. Execution in Counterparts. This Agreement may be executed in any number of counterparts and by different parties hereto in separate counterparts, each of which when so executed shall be deemed to be an original and all of which taken together shall constitute one and the same agreement.

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed by their respective partners and/or officers thereunto duly authorized, as of the date first above written.

THE BORROWER:

ARCADIA BIOSCIENCES, INC.

By: /s/ Eric Rey
Name: Eric Rey
Title: President

THE LENDER:

MORAL COMPASS CORPORATION

By: /s/ John Sperling
Name: John Sperling
Title: Chief Executive Officer

Borrower's Address for Notices:

Arcadia Biosciences, Inc.
Attn: President
202 Cousteau Place
Suite 200
Davis, CA 95618

Lender's Address for Notices:

Moral Compass Corporation
Attn: Chief Financial Officer
4835 E. Exeter Boulevard
Phoenix, AZ 85018

AMENDMENT NO. 1 TO TERM LOAN AGREEMENT

THIS AMENDMENT NO. 1 TO TERM LOAN AGREEMENT ("*Amendment*") is effective as of November 10, 2014 (the "*Amendment Effective Date*") and is entered into by and between Arcadia Biosciences, Inc., an Arizona corporation ("*Borrower*") and Moral Compass Corporation, a Delaware corporation ("*Lender*"). Borrower and Lender may be referred to individually as a "*Party*" and collectively as the "*Parties*."

RECITALS

A. Borrower and Lender entered into that certain Term Loan Agreement as of July 23, 2012 (the "*Loan Agreement*").

B. The Parties wish and intend by this instrument to amend the Loan Agreement in order to update the definitions of "maturity date" and "interest rate."

AGREEMENT

NOW, THEREFORE, in consideration of the mutual covenants and conditions herein, Lender and Borrower hereby agree as follows:

1. Capitalized Terms. All initially capitalized terms used, and not defined, in this Amendment shall have the meanings given to such terms in the Loan Agreement.

2. Maturity Date. The definition of "Maturity Date," as set forth in Section 1.01 of the Agreement, is hereby amended to read in full as follows: "Maturity Date" means the first to occur of the following dates: (i) April 1, 2016, (ii) the date of an Event of Default, or (iii) a date designated by Lender, by notice to Borrower, no earlier than the twentieth (20^{th}) day following consummation by the Borrower of an equity financing with gross proceeds to the Borrower from such offering of at least Fifty Million Dollars ($50,000,000)."

3. Interest Rate. The definition of "Interest Rate," as set forth in Section 1.01 of the Agreement, is hereby amended to read in full as follows: "Interest Rate" means (i) for all periods through December 31, 2014, the Base Rate plus two percent (2%) and (ii) for all periods commencing on January 1, 2015 and extending through the Maturity Date, a fixed rate of eleven percent (11%) per annum."

4. Technical Correction. The words “Base Rate” in Section 2.07(b) of the Agreement are hereby deleted and replaced by the words “Interest Rate.”

5. Effective Date. This Amendment is effective as of the Amendment Effective Date.

6. Full Force and Effect. Except as expressly set forth herein, the Loan Agreement shall remain unmodified and in full force and effect.

[Remainder Intentionally Left Blank.]

IN WITNESS WHEREOF, the parties have executed this Amendment as of the date first above written.

BORROWER:

Arcadia Biosciences, Inc., an Arizona corporation

By: /s/ Eric Rey

Eric Rey, President

LENDER:

Moral Compass Corporation, a Delaware corporation

By: /s/ Terri Bishop

Terri Bishop, President

OFFICE LEASE

This OFFICE LEASE (the "Lease"), dated **March 17, 2003,** for reference purposes only, is by and between **Marvin L. Oates, Trustee of the Marvin L. Oates Trust, dated March 7, 1995, as Amended and Restated December 20, 2001 and Frank C. Ramos and Joanne M. Ramos as husband and wife** ("Landlord"), and **Arcadia Biosciences, Inc., an Arizona Corporation** ("Tenant").

1. **LEASE OF PREMISES.** In consideration of the Rent (as defined at Section 6) and the provisions of this Lease, Landlord leases to Tenant and Tenant leases from Landlord the Premises shown on the floor plan attached hereto as Exhibit "A" (the "Floor Plan") and further described in Section 2(a). The Premises are located within the Building and Project described in Section 2(b). Tenant shall have the non-exclusive right (unless otherwise provided herein) in common with Landlord, other tenants, subtenants and invitees, to use of the Common Areas (as defined at Section 2(n)).

2. **DEFINITIONS.** As used in this Lease, the following terms shall have the following meanings:

(a) Premises: That portion of the Building containing approximately 8,512 square feet of Rentable Area and approximately 7,600 square feet of Usable Area (as may be adjusted pursuant to Section 6(a)(i) below), as shown on the Floor Plan, located on the second floor of the Building and known as Suite 200.

(b) Project: The building of which the Premises are a part (the "Building") and any other buildings or improvements on the real property (the "Property") located at 202 Cousteau Place, Davis, California and further described as: two (2) story freestanding building containing a total Rentable Area of approximately 105,307 rentable square feet. The Project is known as Mace Ranch Corporate Center.

(c) Rentable Area: As to both the Premises and the Project, the respective measurements of floor area as may from time to time be subject to lease by Tenant and all tenants of the Project, respectively, as determined by Landlord and applied on a consistent basis throughout the Project.

(d) Tenant's Proportionate Share: eight and nine one hundredths (8.09%). Such share is a fraction, the numerator of which is the Rentable Area of the Premises, and the denominator of which is the Rentable Area of the Project.

(e) Commencement Date: The anticipated Commencement Date shall be ninety (90) days after issuance of building permit as determined pursuant to Section 3 below.

(f) Term: sixty (60) months, (as may be adjusted pursuant to Section 3), commencing on the Commencement Date and expiring at midnight on the Expiration Date, except where Tenant has extended the Lease according to the terms set forth in Section 3 below. The expiration date of the initial term shall be established on commencement. The Expiration Date shall be sixty (60) months after the Commencement Date (as may be adjusted pursuant to Section 3). The initial term may be extended at Tenant's election for up to three (3) additional three (3) year periods as specified in section 45.

(g) Base Rent: Base Rent shall be payable as follows:÷

Months 01 — 24	$15,321.60 per month ($1.80 per Rentable square foot per month)
Months 25 — 36	$15,747.20 per month ($1.85 per Rentable square foot per month)
Months 37 — 48	$16,172.80 per month ($1.90 per Rentable square foot per month)
Months 49 — 60	$16,598.40 per month ($1.95 per Rentable square foot per month)

(h) Security Deposit (Section 7): See Addendum #47.

(i) Tenant's First Adjustment Date: The first day of the calendar month following the Commencement Date plus twenty-four (24) months.

(j) Index (Section 5(a) (ii)): United State Department of Labor, Bureau of Labor Statistics Consumer Price Index, Subgroup "All Items," for All Urban Consumers - San Francisco / Oakland, (1982-84 = 100).

(k) Base Year: 2003

(1) Expense Stop: N/A

(m) Tenant's Use Clause (Section 9): general office/plant genetics laboratory

(n) Common Areas: The building lobbies, common corridors and hallways, restrooms, garage and parking areas, stairways, elevators and other generally understood public or common areas. Landlord shall have the right, in Landlord's sole discretion, from time to time, except where such action would affect tenant's reasonable use and enjoyment of the property, common areas or premises:

(i) To make changes to the Common Areas, including, without limitation, changes in the location, size, shape and number of driveways, entrances, parking spaces, parking areas, loading and unloading areas, ingress, egress, direction of traffic, landscaped areas, walkways and utility raceways;

(ii) To regulate or restrict the use of the Common Areas;

(iii) To close temporarily any of the Common Areas for maintenance purposes so long as reasonable access to the Premises remains available;

(iv) To designate other land outside the boundaries of the Project to be a part of the Common Areas;

(v) To add additional buildings and improvements to the Common Areas;

(vi) To use the Common Areas while engaged in making additional improvements, repairs or alterations to the Project, or any portion thereof, and

(vii) To do and perform such other acts and make such other changes in, to or with respect to the Common Areas and Project as Landlord may, in the exercise of sound business judgment, deem to be appropriate.

(o) Parking (Section 33): Tenant shall be permitted to park up to 20 cars on a non-exclusive basis in the area(s) designated by Landlord for parking. Tenant shall abide by any and all parking regulations and rules established from time to time by Landlord or Landlord's parking operator.

(p) Broker(s):

Landlord's:	BUZZ OATES REAL ESTATE
Tenant's:	SAM HARRISON — REMAX DAVIS

(q) Landlord's Mailing Address: C/O Buzz Oates Management Services
8615 Elder Creek Road
Sacramento, CA 95828
(916) 381-3843 (telephone) (916) 381-7826 facsimile)

(r) Tenant's Mailing Address: 4455 East Camelback Rd, Suite B-200

Phoenix, AZ 85018
(602)-474-(3789 (telephone) (602)-474-3799 (facsimile)

3. **TERM**. The term of this Lease shall commence on the Commencement Date and shall run for 60 (sixty) months. The "Commencement Date" shall mean the day upon which the Leasehold Improvements have been Substantially Completed as that term is defined below). Leasehold Improvements will be constructed according to the terms and conditions listed on Exhibit A, which is attached and incorporated into this Lease. If requested by Landlord, Tenant shall execute an amendment to this Lease memorializing the Commencement Date once such date has occurred. The Leasehold Improvements shall be deemed to be "Substantially Completed" when Tenant has received a Certificate of Occupancy or Temporary Certificate of Occupancy for the Premises. (The foregoing definition of Substantially Completed shall also define the terms "Substantial Completion" and "Substantially Complete.").

4. **DELIVERY OF POSSESSION**. Landlord shall use commercially reasonable efforts to deliver the Premises to Tenant immediately upon execution of this agreement. .If for any reason Landlord cannot deliver possession of the Premises to Tenant, Landlord shall not be subject to any liability therefor, nor shall such failure affect the validity of this Lease, or the obligations of Tenant hereunder, but in such case, Tenant shall not, except as otherwise provided herein, be obligated to pay rent or perform any other obligation of Tenant under the terms of this Lease until the Commencement Date.

5. **TENANT IMPROVEMENTS**.

(a) On or before February 15, 2003, Tenant shall prepare or cause to be prepared and delivered to Landlord detailed final plans and specifications showing all improvements and alterations which Tenant desires to make to the Premises. Landlord shall approve or disapprove said plans and specifications within fifteen (15) business days of the receipt thereof, stating the reason for any disapproval in writing. If Tenant has not received comment within said fifteen (15) day period from Landlord in writing, Landlord's approval shall be deemed granted. Once approved by Landlord and Tenant, the aforesaid final plans and specifications shall be deemed to be "Tenant Plans".

(b) So long as Tenant is not in default hereunder, Landlord agrees to pay to Tenant's contractor as designated in writing by tenant ("Contractor") an allowance of twenty seven dollars ($27) per square foot of usable Square Feet or two hundred five thousand and two hundred Dollars ($205,200.00) ("Allowance") to be applied to the costs and expenses incurred in connection with the completion of the Tenant Plans. Tenant shall submit Contractor's bills to Landlord at the completion of every calendar month and Landlord shall make payments of the Allowance to Contractor within ten (10) days thereafter. .

(c) Tenant shall submit said Tenant Plans to the City of Davis within ten (10) days after Landlord's approval, and shall use all reasonable efforts to obtain all necessary permits from the City of Davis. Tenant shall cause the tenant improvement work in the Premises to be completed promptly after the issuance of a permit of Tenant Improvements at Tenant's expense in accordance with Tenant's Plans. The Lease will commence upon the earlier of the completion of tenant improvements or June 17, 2003 subject only to delays caused by events of force majeure. In the performance of such work, Tenant shall be governed by Article 12 of the Lease, and all work shall be performed in compliance with all governmental building codes in an acceptable workmanlike manner.

6. **RENT.**

(a) Payment of Base Rent.

(i) Tenant agrees to pay the Base Rent for the Premises as shown in Section 2(g) above. Base Rent, however, shall be calculated based upon the Rentable square feet within the Premises, determined in accordance with the following: within sixty (60) days after completion of construction of the Premises, Landlord's architect shall calculate the Rentable Area and Useable Area of the Premises by application of the standard method for measuring floor area in office buildings (ANSI/BOMA Z65.1-1996). Such architect shall notify Landlord and Tenant of the results of such calculation and the Lease shall be amended to reflect the actual Rentable Area and

Useable Area of the Premises and the resulting changes in Base Rent. In the event that one or more rental payments become due prior to determination of Rentable Area of the Premises pursuant to the above procedures, Tenant shall pay Base Rent based upon the schedule stated above. Upon final determination of Rentable

Area of the Premises, the estimated Base Rent paid by Tenant shall be compared to the actual Base Rent due for such period and, within thirty (30) days, Tenant shall pay Landlord any deficiency or Landlord shall credit any excess payment against Tenant's next installment of Base Rent. Monthly Installments of Base Rent shall be payable in advance on the first day of each calendar month of the Term. If the Term begins (or ends) on other than the first (or last) day of a calendar month, the Base Rent for the partial month shall be prorated on a per diem basis. Tenant shall pay Landlord the first monthly installment of Base Rent when Tenant executes the Lease.

(ii) The Base Rent for the option periods shall be adjusted annually (the Adjustment Date") pursuant to Addendum #45, commencing on Tenant's First Adjustment Date.

(b) Project Operating Costs.

(i) In order that the Rent payable during the Term reflects any increase in Project Operating Costs, Tenant agrees to pay to Landlord as Rent, Tenant's Proportionate Share of all reasonable increases in costs, expenses and obligations attributable to the Project and its operation, all as provided below.

(ii) If, during any calendar year during the Term, Project Operating Costs exceed the Project Operating Costs for the Base Year, Tenant shall pay to Landlord, in addition to the Base Rent and all other payments due under this Lease, an amount equal to Tenant's Proportionate Share of such excess Project Operating Costs in accordance with the provisions of this Section 5(b) (ii).

(iii) The term "Project Operating Costs" shall mean all commercially reasonable direct costs and expenses incurred by Landlord for the ownership, operation, repair, maintenance, replacement, and insurance of the Building and Project including, without limitation, all those items described in the following subparagraphs (a) and (b).

(A) All taxes, assessments, and other similar governmental charges levied on or attributable to the Building or Project or their operation, including without limitation, (i) real property taxes or assessments levied or assessed against the Building or Project, (ii) assessments or charges levied or assessed against the Building or Project by any redevelopment agency, (iii) any tax measured by gross rentals received from the leasing of the Premises, Building or Project, excluding any net income, franchise, capital stock, estate or inheritance taxes imposed by the State or Federal government or their agencies, branches or departments; provided that if at any time during the Term any governmental entity levies, assesses or imposes on Landlord any (1) general or special, ad valorem or specific, excise, capital levy or other tax, assessment, levy or charge directly on the Rent received under this Lease or on the rent received under any other leases of space in the Building or Project, or (2) any license fee, excise or franchise tax, assessment, levy or charge measured by or based, in whole or in part, upon such rent, or (3) any transfer, transaction, or similar tax, assessment, levy or charge based directly or indirectly upon the transaction represented by this Lease or such other leases, or (4) any occupancy, use, per capita or other tax, assessment, levy or charge based directly or indirectly upon the use or occupancy of the Premises or other premises within the Building or Project, then any such taxes, assessments, levies and charges shall be deemed to be included in the term Project Operating Costs. If at any time during the Term, the assessed valuation of, or taxes on, the Project are not based on a completed Project having at least ninety percent (90%) of the Rentable Area occupied, then the "taxes" component of Project Operating Costs shall be adjusted by Landlord to reasonably approximate the taxes which would have been payable if the Project were completed and at least ninety percent (90%) occupied.

(B) Operating costs incurred by Landlord in maintaining and operating the Building and Project, including without limitation the following: costs of (1) utilities, including, without limitation, water, electricity, gas, heating, lighting, sewer, fire system utilities, elevator utilities, storm, drainage, waste disposal; (2) supplies, (3) insurance (including public liability, property damage, earthquake, and fire and flood, loss of rents and extended coverage insurance for the full replacement cost of the Building and Project as required by Landlord or its lenders for the Project; (4) services of independent contractors; (5) compensation

(including employment taxes and fringe benefits) of all persons who perform duties connected with the operation, maintenance, repair or overhaul of the Building or Project, and equipment, improvements and facilities located within the Project including without limitation engineers, janitors, painters, floor waxers, window washers, security (if any, it being agreed that Landlord has no obligation to provide security service to the building) and parking personnel and gardeners (but excluding persons performing services not uniformly available to or performed for substantially all Building or Project tenants); (6) operation and maintenance of a room for delivery and distribution of mail to tenants of the Building or Project as required by the U.S. Postal Service (including, without limitation, an amount equal to the fair market rental value of the mail room premises); (7) management of the Building or Project, whether managed by Landlord or an independent contractor (including, without limitation, an amount equal to the fair market value of any on-site manager's office); (8) rental expenses for (or a reasonable, depreciation allowance on) personal property used in the maintenance, operation or repair of the Building or Project; (9) costs, expenditures or charges (whether capitalized or not) required by any governmental or quasi-governmental authority; (10) amortization of capital expenses (including financing costs) (i) required by a governmental entity for energy conservation or life safety purposes, or (ii) made by Landlord to reduce Project Operating Costs; and (11) any other costs or expenses incurred by Landlord under this Lease and not otherwise reimbursed by tenants of the Project. If at any time during the Term, less than ninety percent (90%) of the Rentable Area of the Project is occupied, the "operating costs" component of Project Operating Costs shall be adjusted by Landlord to reasonably approximate the operating costs which would have been incurred if the Project had been at least ninety percent (90%) occupied.

Notwithstanding the foregoing, the costs and expenses relating to ownership, maintenance and operation of the Premises shall not include the following: the cost of removing any violation of any present laws, ordinances, orders, rules, regulations or requirements of federal, state, municipal and other governmental bodies having jurisdiction over the Property; the cost of tenant installations, and decorations incurred in connection with preparing space for a new tenant (including Tenant); salaries of personnel above the level of building manager; any cost for which Landlord is reimbursed by a tenant in the Building; any cost for which Landlord is reimbursed by insurance proceeds; any costs incurred by Landlord as a result of the employment of entities affiliated with Landlord in excess of the cost Landlord would have incurred had unaffiliated entities been employed by Landlord; and costs incurred in connection with the transfer or other disposition of the Building and/or the Property (not including any increase in any taxes due to such transfer), including legal fees. If the Lease shall terminate or the lease Term shall expire before the amount of any credit due to Tenant for Reimbursable Expenses shall be expended, Landlord shall promptly reimburse such amount to Tenant.

(c) Tenant's Proportionate Share of Project Operating Costs shall be payable by Tenant to Landlord as follows:

(i) Beginning with the calendar year following the Base Year and for each calendar year thereafter ("Comparison Year"), Tenant shall pay Landlord an amount equal to Tenant's Proportionate Share of the Project Operating Costs Incurred by Landlord in the Comparison Year which exceeds the total amount of Project Operating Costs payable by Landlord for the Base Year. This excess is referred to as the "Excess Expenses."

(ii) To provide for current payments of Excess Expenses, Tenant shall, at Landlord's request, pay as additional rent during each Comparison Year, an amount equal to Tenant's Proportionate Share of the Excess Expenses payable during such Comparison Year, as estimated by Landlord from time to time. Such payments shall be made in monthly installments, commencing on the first day of the month following the month in which Landlord notifies Tenant of the amount it is to pay hereunder and continuing until the first day of the month following the month in which Landlord gives Tenant a new notice of estimated Excess Expenses. It is the Landlord's obligation hereunder to estimate from time to time the amount of the Excess Expenses for each Comparison Year and Tenant's Proportionate Share thereof, and then to make an adjustment in the following year based on the actual Excess Expenses incurred for that Comparison Year.

(iii) On or before April 1 of each Comparison Year after the first Comparison Year (or as soon thereafter as is practical), Landlord shall deliver to Tenant a statement setting forth Tenant's Proportionate Share of the Excess Expenses for the preceding Comparison Year. If Tenant's Proportionate Share of the actual Excess Expenses for the previous Comparison Year exceeds the total of the estimated monthly payments made by Tenant for such year, Tenant shall pay Landlord the amount of the deficiency within ten (30) days of the

receipt of the statement. If such total exceeds Tenant's Proportionate Share of the actual Excess Expenses for such Comparison Year, then Landlord shall credit against Tenant's next ensuing monthly installment(s) of additional rent an amount equal to the difference until the credit is exhausted. If a credit is due from Landlord on the Expiration Date, Landlord shall pay Tenant the amount of the credit. The obligations of Tenant and Landlord to make payments required under this Section 5(b) (ii) (C) shall survive the Expiration Date.

(iv) Tenant's Proportionate Share of Excess Expenses in any Comparison Year having less than 365 days shall be appropriately prorated.

(d) If any dispute arises as to the amount of any additional rent due hereunder, Tenant or Tenant's representative shall have the right after reasonable notice and at reasonable times to inspect Landlord's accounting records at Landlord's accounting office and, if after such inspection Tenant still disputes the amount of additional rent owed, a certification as to the proper amount shall be made by an independent certified public accountant mutually accepted by Landlord and Tenant, which certification shall be final and conclusive. Tenant agrees to pay the reasonable cost of such certification unless it is determined that Landlord's original statement overstated Project Operating Costs by more than ten percent (10%), in which case Landlord shall pay the costs. Tenant's right to inspect Landlord's books and records shall be limited to not more than once each calendar year and for the period one year immediately preceding the calendar year in which Tenant's inspection occurs.

(e) Definition of Rent. All costs and expenses which Tenant assumes or agrees to pay to Landlord under this Lease shall be deemed additional rent (which, together with the Base Rent is referred to herein as the "Rent"). The Rent shall be paid to the building manager (or other person) and at such place, as Landlord may from time to time designate in writing, without any prior demand therefor and without deduction or offset, in lawful money of the United States of America. Landlord shall inform Tenant 30 days in advance of any change to whom or to where payment is to be made, or Late Charges reference in Item 6 shall be waived.

(f) Rent Control. If the amount of Rent or any other payment due under this Lease violates the terms of any governmental restrictions on such Rent or payment, then the Rent or payment due during the period of such restrictions shall be the maximum amount allowable under those restrictions. Upon termination of the restrictions, Landlord shall, to the extent it is legally permitted, recover from Tenant the difference between the amounts received during the period of the restrictions and the amounts Landlord would have received had there been no restrictions.

(g) Taxes Payable by Tenant. In addition to the Rent and any other charges to be paid by Tenant hereunder, Tenant shall reimburse Landlord upon demand for any and all taxes payable by Landlord (other than net income taxes) which are not otherwise reimbursable under this Lease, whether or not now customary or within the contemplation of the parties, where such taxes are upon, measured by or reasonably attributable to (a) the cost or value of Tenant's equipment, furniture, fixtures and other personal property located in the Premises, or the cost or value of any leasehold improvements made in or to the Premises by or for Tenant, other than Building Standard Work made by Landlord, regardless of whether title to such improvements is held by Tenant or Landlord; (b) the gross or net Rent payable under this Lease, including, without limitation any rental or gross receipts tax levied by any taxing authority with respect to the receipt of the Rent hereunder; (c) the possession, leasing, operation, management, maintenance, alteration, repair, use or occupancy by Tenant of the Premises or any portion thereof; or (d) this transaction or any document to which Tenant is a party creating or transferring an interest or an estate in the Premises. If it becomes unlawful for Tenant to reimburse Landlord for any costs as required under this Lease, the Base Rent shall be revised to net Landlord the same net Rent after imposition of any tax or other charge upon Landlord as would have been payable to Landlord but for the reimbursement being unlawful. Notwithstanding the foregoing, "taxes" shall not include any franchise, excise, corporate, succession, capital, or levy tax imposed on Landlord, or any income or any other tax, charge or levy (excluding any rental tax or sales tax which is payable to Tenant) upon the Base Rent and/or the Additional Rent reserved under the Lease or any tax, charge or levy not commonly deemed to be a real estate tax.

7. **INTEREST AND LATE CHARGES**. If Tenant fails to pay when due any Rent or other amounts or charges which Tenant is obligated to pay under the terms of this Lease then commencing fifteen (15) calendar

days after such amount was due, the unpaid amounts shall bear interest at the prime commercial rate then being charged by Bank of America NT & SA in effect at that time. Tenant acknowledges that the late payment of any Monthly Installment of Base Rent will cause Landlord to lose the use of that money and incur costs and expenses not contemplated under this Lease, including without limitation, administrative and collection costs and processing and accounting expenses, the exact amount of which is extremely difficult to ascertain. Therefore, in addition to interest, if any such installment is not received by Landlord within fifteen (15) days from the date it is due, Tenant shall pay Landlord a late charge of $500.00. Landlord and Tenant agree that this late charge, along with interest indicated above, represents a reasonable estimate of such costs and expenses and is fair compensation to Landlord for the loss suffered from such nonpayment by Tenant. Acceptance of any interest or late charge shall not constitute a waiver of Tenant's default with respect to such nonpayment by Tenant nor prevent Landlord from exercising any other rights or remedies available to Landlord under this Lease.

8. **SECURITY DEPOSIT.**

(a) Tenant shall deposit with Landlord the Security Deposit set forth at Section 2(h) above, within five (5) business days of the full execution of this Lease, as security for Tenant's faithful performance of its obligations under this Lease. If the Base Rent shall increase during the initial term of

this Lease or during any extensions or renewals thereof, Tenant shall at the time of such increase, deposit with Landlord funds as an additional Security Deposit so that the total amount of the Security Deposit held by Landlord shall at all times be equal to the then current Base Rent. Landlord and Tenant agree that the Security Deposit may be commingled with funds of Landlord and Landlord shall have no obligation or liability for payment of interest on such deposit. Tenant shall not mortgage, assign, transfer or encumber the Security Deposit without the prior written consent of Landlord and any attempt by Tenant to do so shall be void, without force or effect and shall not be binding upon Landlord.

(b) If Tenant fails to pay any Rent or other amount when due and payable under this Lease, or fails to perform any of the terms hereof, Landlord may appropriate and apply or use all or any portion of the Security Deposit for Rent payments or any other amount then due and unpaid, for payment of any amount for which Landlord has become obligated as a result of Tenant's default or breach, and for any loss or damage sustained by Landlord as a result of Tenant's default or breach, and Landlord may so apply or use the Security Deposit without prejudice to any other remedy Landlord may have by reason of Tenant's default or breach. If Landlord so uses any of the Security Deposit, Tenant shall, within ten (10) days after written demand therefor, restore the Security Deposit to the full amount previously deposited; Tenant's failure to do so shall constitute an act of default hereunder and Landlord shall have the right to exercise any remedy provided for at Section 27 hereof. Within thirty (30) days after the Term (or any extension thereof) has expired or Tenant has vacated the Premises, whichever shall last occur, and provided Tenant is not then in default on any of its obligations hereunder, Landlord shall return the Security Deposit to Tenant, or, if Tenant has assigned its interest under this Lease, to the last assignee of Tenant. If Landlord sells its interest in the Premises, Landlord may deliver the Security Deposit to the purchaser of Landlord's interest and thereupon be relieved of any further liability or obligation with respect to the Security Deposit.

9. **TENANT'S USE OF THE PREMISES**. Tenant shall use the Premises solely for the purposes set forth in Tenant's Use Clause. Tenant shall not use or occupy the Premises in violation of law or any covenant, condition or restriction affecting the Building or Project or the certificate of occupancy issued for the Building or Project, and shall, upon notice from Landlord, immediately discontinue any use of the Premises which is declared by any governmental authority having jurisdiction to be a violation of law or the certificate of occupancy. Tenant, at Tenant's own cost and expense, shall comply with all laws, ordinances, regulations, rules and/or any directions of any governmental agencies or authorities having jurisdiction which shall, by reason of the nature of Tenant's use or occupancy of the Premises, impose any duty upon Tenant or Landlord with respect to the Premises or its use or occupation. A judgment of any court of competent jurisdiction or the admission by Tenant in any action or proceeding against Tenant that Tenant has violated any such laws, ordinances, regulations, rules and/or directions in the use of the Premises shall be deemed to be a conclusive determination of that fact as between Landlord and Tenant. Tenant shall not do or permit to be done anything which will invalidate or increase the cost of any fire, extended coverage or other insurance policy covering the Building or Project and/or property located therein, and shall comply with all rules, orders, regulations, requirements and recommendations of the Insurance Services Office or any other organization performing a similar function. Tenant shall promptly upon demand reimburse Landlord for any additional premium charged for such policy by reason of Tenant's failure to comply with the provisions of this

Section. Tenant shall not do or permit anything to be done in or about the Premises which will in any way obstruct or interfere with the rights of other tenants or occupants of the Building or Project, or injure or unreasonably annoy them, or use or allow the Premises to be used for any or unlawful purpose, nor shall Tenant cause, maintain or permit any nuisance in, on or about the Premises. Tenant shall not commit or suffer to be committed any waste in or upon the Premises. The parties agree that this Lease is subject to the effect of (i) any covenants, conditions, restrictions, easements, mortgages or deeds of trust, ground leases, rights of way of record, and any other matters or documents of record; (ii) any zoning laws, environmental impact report mitigation monitoring plan, or planned unit development guidelines of the city, county and state where the Building is situated; and (iii) general and special taxes not delinquent. Tenant agrees that as to its leasehold estate, Tenant and all persons in possession or holding under Tenant, will conform to and will not violate the terms of any covenants, conditions or restrictions of record which may now or hereafter encumber the Property (hereinafter the "restrictions"). This Lease is subordinate to the restrictions and any amendments or modifications thereto.

10. **SERVICES AND UTILITIES**. Landlord shall furnish all normal services and utilities such as elevator service, lighting replacement for building standard lights, restroom supplies, window washing, janitorial services, heating, ventilation and air conditioning ("HVAC") maintenance, landscape maintenance, parking lot sweeping, pest control services, and fire alarm monitoring (if installed and required) in a manner that such services are customarily furnished to comparable office buildings in the area. Landlord shall also provide water, sewer, electric, gas and trash removal services to the building as required.

Provided that Tenant is not in default hereunder, Landlord agrees to furnish to the Premises at all times , electricity for normal desk top office equipment, .normal copying equipment, technical equipment, and "HVAC" as is reasonably required for the comfortable use and occupancy of the Premises. The normally recognized business hours for the Building are as follows: 7:00 am to 6:00 pm Monday through Friday (except Holidays), and 8:00 am to 1:00 p.m. on Saturdays. If Tenant desires HVAC and/or electricity at any other time, Tenant may override the HVAC and/or electricity system for additional heating, cooling or electricity outside of the normal business hours. Such additional HVAC and/or electricity usage shall be electronically monitored, and Tenant shall pay Landlord's direct charges therefore on demand. Landlord shall also maintain and keep lighted the common stairs, common entries and restrooms in the Building. Landlord shall not be in default hereunder or be liable for any damages directly or indirectly resulting from, nor shall the Rent be abated by reason of (i) the installation, use or interruption of use of any equipment in connection with the furnishing of any of the foregoing services, (ii) failure to furnish or delay in furnishing any such services where such failure or delay is caused by accident or any condition or event beyond the reasonable control of Landlord, or by the making of necessary repairs or improvements to the Premises, Building or Project, or (iii) the limitation, curtailment or rationing of, or restrictions on, use of water, electricity, gas or any other form of energy serving the Premises, Building or Project, which has been imposed upon the Landlord. Landlord shall not be liable except where Landlord is found to be grossly negligent for a loss of or injury to property or business, however occurring, through or in connection with or incidental to failure to furnish any such services. If Tenant uses heat generating machines or equipment in the Premises which affect the temperature otherwise maintained by the HVAC system, Landlord reserves the right to install supplementary air conditioning units in the Premises and the cost thereof, including the cost of installation, operation and maintenance thereof, shall be paid by Tenant to Landlord upon demand by Landlord.

Should Tenant consume water or electric current in excess of that usually furnished or supplied for the use of premises as general office space Landlord may have installed a water meter or electrical current meter in the Premises to measure the amount of water or electric current consumed. The cost of any such meter and its installation, maintenance and repair shall be paid for by the Tenant and Tenant agrees to pay to Landlord promptly upon demand for all such water and electric current consumed as shown by said meters, at the rates charged for such services by the local public utility. If a separate meter is not installed, the excess cost for such water and electric current shall be established by an estimate made by a utility company or an electrical engineer hired jointly by Landlord and Tenant and at Tenant's expense.

Nothing contained in this Section shall restrict Landlord's right to require at any time separate metering of utilities furnished to the Premises. In the event utilities are separately metered, Tenant shall pay promptly upon demand for all utilities consumed at utility rates charged by the local public utility plus any additional expense incurred by Landlord in

keeping account of the utilities so consumed. Tenant shall be responsible for the maintenance and repair of any such meters at its sole cost.

11. **CONDITION OF THE PREMISES**. Tenant's taking possession of the Premises shall be deemed conclusive evidence that as of the date of taking possession the Premises are in good order and satisfactory condition, except for such matters as to which Tenant gave Landlord notice on or before the Commencement Date. No promise of Landlord to alter, remodel, repair or improve the Premises, the Building or the Project and no representation, express or implied, respecting any matter or thing relating to the Premises, Building, Project or this Lease (including, without limitation, the condition of the Premises, the Building or the Project) have been made to Tenant by Landlord or its Broker or Sales Agent, other than as may be contained herein or in a separate exhibit or addendum, attached hereto, signed by Landlord and Tenant.

12. **CONSTRUCTION, REPAIRS AND MAINTENANCE**.

(a) Landlord's Obligations.

(i) Subject to reimbursement in accordance with Section 5(b), (except as otherwise provided herein), Landlord shall maintain, repair, and replace in a commercially reasonable manner as quickly as reasonably possible and as necessary the plumbing, heating, ventilating and air conditioning, lighting and other electrical and mechanical equipment, sprinkler system, elevators, and glass (unless broken or damaged due to the negligence or willful misconduct of Tenant) within the Property, and make all other repairs or replacements to the Property which Tenant is not hereby required to make. Landlord shall maintain, repair and replace as necessary the exterior of the Building, including the roof, exterior walls, drains, downspouts, and gutters. Landlord shall maintain, repair, and replace as necessary the driveways, sidewalks, parking areas, lighting, landscaping and fencing located outside of and serving the Building. Landlord's obligations regarding any heating, ventilation and air conditioning ("HVAC") and electrical systems shall be limited to the Building's standard central HVAC and electrical systems, and Landlord shall have no obligation to maintain or repair any HVAC or electrical system that has been installed to accommodate Tenant's specific use of the Premises including, without limitation, any HVAC units which control the temperature in Tenant's computer server room (provided, however, that any contractor retained by Tenant to maintain or repair any such HVAC or electrical system shall be subject to Landlord's reasonable approval). Landlord shall not be obligated to service, maintain, repair or replace any system or improvement in the Premises that has not been installed by Landlord at Landlord's expense, or which is a specialized improvement requiring additional or extraordinary maintenance or repair (by way of example only, if the standard premises in the Building contain fluorescent light fixtures, Landlord's obligation shall be limited to the replacement of Building standard fluorescent light tubes, irrespective of any incandescent fixtures that may have been installed in the Premises at Tenant's expense). Landlord shall not be liable for, and Tenant shall not be entitled to any abatement or reduction of rent by reason of Landlord's failure to furnish, or an interruption in, any services or utilities (including, without limitation, any interruption in telephone service caused by a failure of the cabling) when such failure is caused by accident, breakage, repairs, strikes, lockouts or other labor disturbances or labor disputes of any character or for any other causes. Tenant hereby waives the provisions of California Civil Code Section 1932(1) or any other applicable existing or future law, ordinance or governmental regulation permitting the termination of this Lease due to the interruption or failure of any services or utilities to be provided under this Lease, except to the extent such interruption or failure is caused by Landlord's grossly negligent act or omission or willful misconduct.

(b) Tenant's Obligations.

(i) Tenant shall exercise good judgment in their use of the premises and common areas so as to not damage the property or cause unnecessary wear and tear. Tenant shall be financially responsible for all maintenance and repairs caused by the negligence or willful misconduct of itself, its employees, vendors, and invitees.

(ii) Tenant shall be responsible for all repairs and alterations in and to the Premises, Building and Project and the facilities and systems thereof, the need for which arises out of (i) Tenant's use or occupancy of the Premises, (ii) the installation, removal, use or operation of Tenant's Property (as defined in Section 13) in the Premises, (iii) the moving of Tenant's Property into or out of the Building, or (iv) the negligence or

willful misconduct of Tenant, its agents, contractors, employees or invitees. Tenant shall complete all repairs in full compliance with all applicable laws including, but not limited to, the Americans with Disabilities Act of 1990 and all regulations issued thereunder.

(iii) If Tenant fails to maintain the Premises in good order, condition and repair, Landlord shall give Tenant notice to do such acts as are reasonably required to so maintain the Premises. If Tenant fails to promptly commence such work and diligently prosecute it to completion, then Landlord shall have the right to do such acts and expend such funds at the expense of Tenant as are reasonably required to perform such work. Any amount so expended by Landlord shall be paid by Tenant promptly after demand with interest at the prime commercial rate then being charged by Bank of America NT & SA plus two percent (2%) per annum, from the date of such work, but not to exceed the maximum rate then allowed by law. Landlord shall have no liability to Tenant for any damage, inconvenience, or interference with the use of the Premises by Tenant as a result of performing any such work.

(c) Compliance with Law. Landlord and Tenant shall each do all acts required to comply with all applicable laws, ordinances, and rules of any public authority relating to their respective maintenance and repair obligations as set forth herein.

(d) Waiver by Tenant. Tenant expressly waives the benefits of any statute now or hereafter in effect which would otherwise afford the Tenant the right to make repairs at Landlord's expense or to terminate this Lease because of Landlord's failure to keep the Premises in good order, condition and repair.

(e) Load and Equipment Limits. Tenant shall not place a load upon any floor of the Premises which exceeds the load per square foot which such floor was designed to carry, as determined by Landlord or Landlord's structural engineer. The cost of any such determination made by Landlord's structural engineer shall be paid for by Tenant upon demand. Tenant shall not install business machines or mechanical equipment which cause noise or vibration to such a degree as to cause unreasonable distress to Landlord or other Building tenants. Landlord has reviewed and approved the mechanical plan for Tenant's leasehold improvements which are attached as Exhibit A-4.

(f) Except as otherwise expressly provided in this Lease, Landlord shall have no liability to Tenant nor shall Tenant's obligations under this Lease be reduced or abated in any manner whatsoever by reason of any inconvenience, annoyance, interruption or injury to business arising from Landlord's making reasonable repairs or changes which Landlord is required or permitted by this Lease or by any other tenant's lease or required by law to make in or to any portion of the Project, Building or the Premises. Landlord shall nevertheless use reasonable efforts to complete repairs in a timely manner and to minimize any interference with Tenant's business in the Premises.

(g) Tenant shall give Landlord prompt notice of any damage to or defective condition in any part or appurtenance of the Building's mechanical, electrical, plumbing, HVAC or other systems serving, located in, or passing through the Premises.

(g) Upon the expiration or earlier termination of this Lease, Tenant shall return the Premises, as modified by the Leasehold Improvements to Landlord clean except for normal wear and tear. Any damage to the Premises, including any structural damage, resulting from Tenant's use or from the removal of Tenant's fixtures, furnishings and equipment pursuant to Section 13 shall be repaired by Tenant at Tenant's expense.

13. **ALTERATIONS AND ADDITIONS**. After completion of the Leasehold Improvements Tenant shall not make any additions, alterations or improvements to the Premises without obtaining the prior written consent of Landlord, which shall not be unreasonably withheld. Landlord's consent may be conditioned on Tenant's removing any such additions, alterations or improvements upon the expiration of the Term and restoring the Premises to the same condition as on the date Tenant took possession. All work with respect to any addition, alteration or improvement shall be done in a good and workmanlike manner by properly qualified and licensed personnel approved by Landlord, and such work shall be diligently prosecuted to completion. Landlord may withhold its approval of any alteration, addition, or improvement that requires work which does not comply with any

applicable laws (including, without limitation, the Americans with Disabilities Act of 1990 and all regulations issued thereunder) or requires other alterations, additions, or improvements of the Premises or common areas in order to comply with applicable laws.

(i) Tenant shall pay the costs of any work done on the Premises pursuant to this Section 12, and shall keep the Premises, Building and Project free and clear of liens of any kind. Tenant shall indemnify, defend against and keep Landlord free and harmless from all liability, loss, damage, costs, attorneys' fees and any other expense incurred on account of claims by any person performing work or furnishing materials or supplies for Tenant or any person claiming under Tenant.

(ii) Tenant shall keep Tenant's leasehold interest, and any additions or improvements which are or become the property of Landlord under this Lease, free and clear of all attachment or judgment liens. Before the actual commencement of any work for which a claim or lien may be filed, Tenant shall give Landlord notice of the intended commencement date a sufficient time before that date to enable Landlord to post notices of non-responsibility or any other notices which Landlord deems necessary for the proper protection of Landlord's interest in the Premises, Building or the Project, and Landlord shall have the right to enter the Premises and post such notices at any reasonable time..

(iii) Unless their removal is required by Landlord as provided in Section 13, all additions, alterations and improvements made to the Premises shall become the property of Landlord and be surrendered with the Premises upon the expiration of the Term; provided, however, Tenant's equipment, machinery and trade fixtures which can be removed without damage to the Premises shall remain the property of Tenant and may be removed, subject to the provisions of Section 13.

14. **LEASEHOLD IMPROVEMENTS; TENANT'S PROPERTY.**

(i) All fixtures, equipment, improvements and appurtenances attached to or built into the Premises at the commencement of or during the Term, whether or not by or at the expense of Tenant ("Leasehold Improvements"), shall be and remain a part of the Premises, shall be the property of Landlord and shall not be removed by Tenant, except as expressly provided in Section 14.

(ii) All movable partitions, business and trade fixtures, machinery and communications equipment and office equipment located in the Premises and acquired by or for the account of Tenant, without expense to Landlord, which can be removed without structural damage to the Building, and all furniture, furnishings and other sections of movable personal property owned by Tenant and located in the Premises (collectively "Tenant's Property") shall be and shall remain the property of Tenant and may be removed by Tenant at any time during the Term; provided that if any of Tenant's Property is removed, Tenant shall promptly repair any damage to the Premises or to the Building resulting from such removal.

15. **RULES AND REGULATIONS**. Tenant agrees to comply with (and cause its agents, contractors, employees and invitees to comply with) the rules and regulations attached hereto as Exhibit "C" and with such reasonable modifications thereof and additions thereto as Landlord may from time to time make. Notwithstanding the foregoing, any rule or regulation that requires Tenant to shut off utilities such as electricity before Tenant leaves the Premises and where such utilities are required to maintain Tenant's equipment and experiments conducted on the Premises shall not be applicable to Tenant. Landlord shall not be responsible for any violation of said rules and regulations by other tenants or occupants of the Building or Project.

16. **CERTAIN RIGHTS RESERVED BY LANDLORD**. Landlord reserves the following rights, exercisable without liability to Tenant for (a) damage or injury to property, person, or business, (b) causing an actual or constructive eviction from the Premises, or (c) disturbing Tenant's use or possession of the Premises:

(a) To name the Building and Project and to change the name or street address of the Building or Project;

(b) To install and maintain all signs on the exterior and interior of the Building and Project;

(c) To have pass keys to the Premises and all doors within the Premises, excluding Tenant's vaults and safes which shall be utilized only after providing advance notice to Tenant of such intention;

(d) At any time during the Term, and on reasonable prior notice to Tenant, to inspect the Premises, and to show the Premises to any prospective purchaser or mortgagee of the Project, or to any assignee of any mortgage on the Project, or to others having an interest in the Project or Landlord, and during the last six months of the Term, to show the Premises to prospective tenants thereof; and

(e) With reasonable prior notice to enter the Premises for the purpose of making inspections, repairs, alterations, additions or improvements to the Premises or the Building (including, without limitation, checking, calibrating, adjusting or balancing controls and other parts of the HVAC system), and to take all steps as may be necessary or desirable for the safety, protection, maintenance or preservation of the Premises or the Building or Landlord's interest therein, or as may be necessary or desirable for the operation or improvement of the Building or in order to comply with laws, orders or requirements of governmental or

other authorities. Landlord agrees to use its best efforts (except in an emergency) to minimize interference with Tenant's business in the Premises in the course of any such entry Because of the confidential and proprietary nature of the Tenant's business, at the Tenant's sole discretion Tenant may require completion of a Confidentiality and Non-Disclosure Agreement prior to granting access to an individual.

17. **ASSIGNMENT AND SUBLETTING**. No assignment of this Lease or sublease of all or any part of the Premises shall be permitted, except as provided in this Section 16.

(a) Tenant shall not, without the prior written consent of Landlord, which shall not be unreasonably withheld, assign or hypothecate this Lease or any interest herein or sublet the Premises or any part thereof, or permit the use of the Premises by any party other than Tenant. Any of the foregoing acts without such consent shall be void and shall, at the option of Landlord, terminate this Lease. This Lease shall not, nor shall any interest of Tenant herein, be assignable by operation of law without the written consent of Landlord, which shall not be unreasonably withheld.

(b) If at any time or from time to time during the Term Tenant desires to assign this Lease or sublet all or any part of the Premises, Tenant shall give notice to Landlord setting forth the terms and provisions of the proposed assignment or sublease, and the identity of the proposed assignee or subtenant. Tenant shall promptly supply Landlord with such information concerning the business background and financial condition of such proposed assignee or subtenant as Landlord may reasonably request. Landlord shall have the option, exercisable by notice given to Tenant within twenty (20) days after Tenant's notice is given, either to sublet such space from Tenant at the rental and on the other terms set forth in this Lease for the term set forth in Tenant's notice, or, in the case of an assignment, to terminate this Lease. If Landlord does not exercise such option, Tenant may assign the Lease or sublet such space to such proposed assignee or subtenant on the following further conditions:

(i) Landlord shall have the right to approve such proposed assignee or subtenant, and will not unreasonably withhold approval;

(ii) The assignment or sublease shall be on the same terms as this lease. No assignment or sublease shall be valid and no assignee or subtenant shall take possession of the Premises until an executed counterpart of such assignment or sublease has been delivered to Landlord;

(iii) No assignee or subtenant shall have a further right to assign or sublet except on the terms herein contained;

(c) Notwithstanding the provisions of paragraphs a and b above, Tenant, upon written notice to Landlord, may assign this Lease or sublet the Premises or any portion thereof, without Landlord's consent and

without extending any recapture or termination option to Landlord, to any corporation which controls, is controlled by or is under common control with Tenant, or to any corporation resulting from a merger or consolidation with Tenant, or to any person or entity which acquires assets of Tenant's business as a going concern, provided that (i) the assignee or subtenant assumes, in full, the obligations of Tenant under this Lease, (ii) Tenant remains fully liable under this Lease, and (iii) the use of the Premises under Section 9 remains unchanged.

(d) No subletting or assignment shall release Tenant of Tenant's obligations under this Lease or alter the primary liability of Tenant to pay the Rent and to perform all other obligations to be performed by Tenant hereunder. The acceptance of Rent by Landlord from any other person shall not be deemed to be a waiver by Landlord of any provision herein. Consent to one assignment or subletting shall not be deemed consent to any subsequent assignment or subletting. In the event of default by an assignee or subtenant of Tenant or any successor of Tenant in the performance of any of the terms hereof, Landlord may proceed directly against Tenant without the necessity of exhausting remedies against such assignee, subtenant or successor. Landlord may not consent to subsequent assignments of the Lease or subletting or amendments or modifications to the Lease with assignees of Tenant, without notifying Tenant, or any successor of Tenant, and without obtaining its or their consent thereto and any such actions shall not relieve Tenant of liability under this Lease.

(e) If Tenant assigns the Lease or sublets the Premises or requests the consent of Landlord to any assignment or subletting or if Tenant requests the consent of Landlord for any act that Tenant proposes to do, then Tenant shall, upon demand, pay Landlord an administrative fee of One Hundred Fifty and No/100 Dollars ($150.00) plus any attorneys' fees reasonably incurred by Landlord in connection with such act or request.

18. **HOLDING OVER.** Tenant has no right to retain possession of the Premises or any part thereof beyond the expiration or earlier termination of this Lease. In the event that Tenant holds over in violation of this Paragraph 17 then the Base Rent payable from and after the time of the expiration or earlier termination of this Lease shall be increased to one hundred ten percent (110%) of the Base Rent applicable during the month immediately preceding such expiration or earlier termination. Nothing contained herein shall be construed as a consent by Landlord to any holding over by Tenant.

19. **SURRENDER OF PREMISES.**

(a) Tenant shall peaceably surrender the Premises to Landlord on the Expiration Date, in broom-clean condition and in as good condition as when Tenant took possession, except for (i) reasonable wear and tear, (ii) loss by fire or other casualty, and (iii) loss by condemnation. Tenant shall, on Landlord's request, remove Tenant's Property on or before the Expiration Date and promptly repair all damage to the Premises or Building caused by such removal.

(b) If Tenant abandons or surrenders the Premises, or is dispossessed by process of law or otherwise, any of Tenant's Property left on the Premises shall be deemed to be abandoned, and, at Landlord's option, title shall pass to Landlord under this Lease as by a bill of sale. If Landlord elects to remove all or any part of such Tenant's Property, the cost of removal, including repairing any damage to the Premises or Building caused by such removal, shall be paid by Tenant. On the Expiration Date Tenant shall surrender all keys to the Premises.

20. **DESTRUCTION OR DAMAGE.**

(a) If the Premises or the portion of the Building necessary for Tenant's occupancy is damaged by fire, earthquake, act of God, the elements of other casualty, Landlord shall, subject to the provisions of this Section, promptly repair the damage, if such repairs can, in Landlord's opinion, be completed within (90) ninety days. If Landlord determines that repairs can be completed within ninety (90) days, this Lease shall remain in full force and effect, except that if such damage is not the result of misconduct or willful misconduct of Tenant or Tenant's agents, employees, contractors, licensees or invitees, the Base Rent shall be abated to the extent Tenant's use of the Premises is impaired, commencing with the date of damage and continuing until completion of the repairs required of Landlord under Section 19.

(b) If in Landlord's opinion, such repairs to the Premises or portion of the Building necessary for Tenant's occupancy cannot be completed within ninety (90) days, Landlord may elect, upon notice to Tenant given within thirty (30) days after the date of such fire or other casualty, to repair such damage, in which event this Lease shall continue in full force and effect, but the Base Rent shall be partially abated as provided in Section 19. If Landlord does not so elect to make such repairs, this Lease shall terminate as to the date of such fire or other casualty.

(c) If any other portion of the Building or Project is totally destroyed or damaged to the extent that in Landlord's opinion repair thereof cannot be completed within ninety (90) days, Landlord may elect upon notice to Tenant given within thirty (30) days after the date of such fire or other casualty, to repair such damage, in which event this Lease shall continue in full force and effect, but the Base Rent shall be partially abated as provided in Section 19. If Landlord does not elect to make such repairs, this Lease shall terminate as of the date of such fire or other casualty.

(d) If the Premises are to be repaired under this Section, Landlord shall repair at its cost any injury or damage to the Building and Building Standard Work in the Premises. Tenant shall be responsible at its sole cost and expense for the repair, restoration and replacement of any other Leasehold Improvements and Tenant's Property unless damage was a result of Landlord's willful negligence. Landlord shall not be liable for any loss of business, inconvenience or annoyance arising from any repair or restoration of any portion of the Premises, Building or Project as a result of any damage from fire or other casualty.

(e) This Lease shall be considered an express agreement governing any case of damage to or destruction of the Premises, Building or Project by fire or other casualty, and any present or future law which purports to govern the rights of Landlord and Tenant in such circumstances in the absence of express agreement, shall have no application.

21. **EMINENT DOMAIN.**

(a) If the whole of the Building or Premises is lawfully taken by condemnation or in any other manner for any public or quasi-public purpose, this Lease shall terminate as of the date of such taking, and Rent shall be prorated to such date. If less than the whole of the Building or Premises is so taken, this Lease shall be unaffected by such taking, provided that (i) Tenant shall have the right to terminate this Lease by notice to Landlord given within thirty (30) days after the date of such taking if twenty percent (20%) or more of the Premises is taken and the remaining area of the Premises is not reasonably sufficient for Tenant to continue operation of its business, and (ii) Landlord shall have the right to terminate this Lease by notice to Tenant given within ninety (90) days after the date of such taking. If either Landlord or Tenant so elects to terminate this Lease, the Lease shall terminate on the thirtieth (30th) day after either such notice. The Rent shall be prorated to the date of termination. If this Lease continues in force upon such partial taking, the Base Rent and Tenant's Proportionate Share shall be equitably adjusted according to the remaining Rentable Area of the Premises and Project.

(b) In the event of any taking, partial or whole, all of the proceeds of any lawful judgment or settlement payable by the condemning authority shall be the exclusive property of Landlord, and Tenant hereby assigns to Landlord all of its rights, title and interest in any award, judgment or settlement from the condemning authority. Tenant, however, shall have the right, to the extent that Landlord's award is not reduced or prejudiced, to claim from the condemning authority (but not from Landlord) such compensation as may be recoverable by Tenant in its own right for relocation expenses and damage to Tenant's personal property, fixtures and tenant improvements.

(c) In the event of a partial taking of the Premises which does not result in a termination of this Lease, Landlord shall restore the remaining portion of the Premises as nearly as practicable to its condition prior to the condemnation or taking, but only to the extent of Building Standard Work, Tenant shall be responsible at its sole cost and expense for the repair, restoration and replacement of any other Leasehold Improvements and Tenant's Property.

22. **INDEMNIFICATION.**

(a) Tenant's Indemnification: Except for Landlord's gross negligence or intentional misconduct, Tenant shall defend, indemnify and hold harmless Landlord from and against any and all claims arising out of or related to Tenant's use or occupancy of the Premises, or arising out of or related to the conduct of Tenant's business or arising out of or related to any activity, work or things done, or permitted by Tenant, or its employees contractors or agents, in or about the Premises and shall further indemnify and hold harmless Landlord from and against all costs, reasonable attorney's fees, expenses and liabilities incurred in the defense of any such claim or any action or proceeding brought thereon. If Landlord shall, without fault on its part, be made a party to any litigation commenced by or against Tenant, then Tenant shall pay all costs and reasonable attorney's fees incurred by such litigation.

(b) Landlord's Indemnification: Landlord shall defend, indemnify and hold harmless Tenant from and against any and all claims arising out of any activity, work or things done, or permitted by Landlord in or about the Common Areas of the Building or the Common Areas of the Project and shall further indemnify and hold harmless Tenant from and against all costs, reasonable attorney's fees, expenses and liabilities incurred in the defense of any such claim or any action or proceeding brought thereon.

(c) Either party shall retain the right to reject defense counsel appointed by the other party or its agents, and to appoint other counsel, if such party believes that such counsel as appointed by the other party or its agents will not adequately represent their interests in the case.

(d) Tenant, as a material part of the consideration to Landlord, hereby assumes all risk, of damage to property of Tenant or injury to persons, in, upon or about the Premises arising from any cause and Tenant hereby waives all claims in respect thereof against Landlord. Tenant, as a material part of the consideration to Landlord, hereby acknowledges that there is a risk of harm to Tenant's property and injury to the persons in, upon or about the Premises arising from any cause or event and Tenant agrees to assume all such risks of harm and Tenant hereby waives all claims in respect thereof against Landlord. Tenant hereby agrees that Landlord shall not be liable for injury to Tenant's business or any loss of income therefrom or for damage to the goods, wares, merchandise or other property of Tenant, Tenant's employees, invitees, customers, or any other persons in or about the Premises, Landlord shall not be liable for injury to Tenant, Tenant's employees, agents or contractors, whether such damage or injury is caused by or results from fire, steam, electricity, gas, water or rain, or from the breakage, leakage, obstruction or other defects of pipes, sprinklers, wires, appliances, plumbing, air conditioning or lighting fixtures, or from any other cause of such damages or injury, or for loss or damage to Tenant's business or other economic loss (whether direct or consequential), and for the injury or death to any persons in, on or about the Premises, except for damage or loss directly caused by Landlord's gross negligence or willful misconduct. Tenant agrees that in no case shall Landlord ever be responsible or liable on any theory for any injury to Tenant's business, loss of profits, loss of income or any other form of consequential damage. Landlord shall not be liable for any damages arising from any act or omission of any other Tenant, occupant or use of the building and parcel of which the Premises are a part, nor from the failure of Landlord to enforce the provision of any other lease of the Building, or the rules of the Building and parcel of which the Premises are a part.

23. **TENANT'S INSURANCE.**

(a) Insurance required hereunder shall be issued by companies duly licensed to transact business in the State of California, and maintaining during the policy term a "General Policyholders Rating" of at least B+, V, or such other rating as may be required by a Lender having a lien on the Premises, as set forth in the most current issue of "Best's Insurance Guide". Tenant shall not do or permit to be done anything which shall invalidate the insurance policies referred to in this Section 22. Tenant shall cause to be delivered to Landlord certified copies of policies of such insurance or certificates evidencing the existence and amounts of such insurance with the insured and loss payable clauses as required by this Lease. No such policy shall be cancelable or subject to modification except after thirty (30) days prior written notice to Landlord. Tenant shall at least thirty (30) days prior to the expiration of such policies, furnish Landlord with evidence of renewals or "insurance binders" evidencing renewal thereof, or Landlord may order such insurance and charge the cost thereof to Tenant, which amount shall be payable by Tenant to Landlord upon demand. If Tenant shall fail to procure and maintain the insurance required under this Section 22, Landlord may, but shall not be required to, procure and maintain the same, but at Tenant's expense.

(i) Beginning on the date Tenant is given access to the Premises for any purpose and continuing until expiration of the Term, Tenant shall procure, pay for and maintain in effect policies of casualty insurance covering (i) all Leasehold Improvements (including any alterations, additions or improvements as may be made by Tenant pursuant to the provisions of Section 12 hereof), and (ii) trade fixtures, merchandise and other personal property from time to time in, on or about the Premises, in and amount not less than one hundred percent (100%) of their actual replacement cost from time to time, providing protection against any peril included within the classification "Fire and Extended Coverage" together with insurance against sprinkler damage, vandalism and malicious mischief. The proceeds of such insurance shall be used for the repair or replacement of the property so insured. Upon termination of this lease following a casualty as set forth herein, the proceeds under Section (i) above shall be paid to Landlord and the proceeds under Section (ii) above shall be paid to Tenant.

(ii) Commercial General Liability policy of insurance protecting the following as Additionally insureds **Marvin L. Oates, Trustee of the Marvin L. Oates Trust, dated March 7, 1995, as Amended and Restated December 20, 2001 and Frank C. Ramos and Joanne M. Ramos as husband and wife (Landlord), Buzz Oates Management Services, Inc. (the "Property Manager"),** against claims for bodily injury, personal injury and property damage based upon, involving or arising out of the ownership, use, occupancy or maintenance of the Premises and all areas appurtenant thereto. Such insurance shall be on an occurrence basis providing single limit coverage in an amount not less than $2,000,000 per occurrence with an "Additional Insured-Managers or Landlords of Premises" Endorsement and contain the "Amendment of the Pollution Exclusion" for damage caused by heat, smoke or fumes from a hostile fire. The policy shall not contain any intra-insured exclusions as between insured persons or organizations, but shall include coverage for liability assumed under this Lease as an "insured contract" for the performance of Tenant's indemnity obligations under this Lease. The limits of said insurance required by this Lease or as carried by Tenant shall not, however, limit the liability of Tenant nor relieve Tenant of any obligation hereunder. All insurance to be carried by Tenant shall be primary to and not contributory with any similar insurance carried by Landlord, whose insurance shall be considered excess insurance only.

(iii) Not less than every three (3) years during the Term, Landlord and Tenant shall mutually agree to increases in all of Tenant's insurance policy limits for all insurance to be carried by Tenant as set forth in this Section, if required.

24. **WAIVER OF SUBROGATION.** Tenant and Landlord each hereby release and relieve the other, and waive their entire right of recovery against the other for loss or damage arising out of or incident to the perils insured against which perils occur in, on or about the Premises and/or the Building, whether due to the negligence of Landlord or Tenant or their agents, employers, contractors and/or invitees. Tenant and Landlord shall, upon obtaining the policies of insurance required give notice to the insurance carrier or carriers that the foregoing mutual waiver of subrogation is contained in this Lease.

25. **SUBORDINATION AND ATTORNMENT.** Upon written request of Landlord, or any first mortgagee or first deed of trust beneficiary of Landlord, or ground landlord of Landlord, Tenant shall, in writing, subordinate its rights under this Lease to the lien of any first mortgage or first deed of trust or to the interest of any lease in which Landlord is Tenant, and to all advances made or hereafter to be made thereunder. However, before signing any subordination agreement, Tenant shall have the right to obtain from any lender or Landlord or ground landlord requesting such subordination, an agreement in writing providing that, as long as Tenant is not in default hereunder, this Lease shall remain in effect for the full Term. The holder of any security interest may, upon written notice to Tenant, elect to have this Lease prior to its security interest regardless of the time of the granting or recording of such security interest. In the event of any foreclosure sale, transfer in lieu of foreclosure or termination of the lease in which Landlord is Tenant, Tenant shall attorn to the purchaser, transferee or Landlord as the case may be, and recognize that party as Landlord under this Lease provided such party acquires and accepts the Premises subject to this Lease.

26. **TENANT ESTOPPEL CERTIFICATES.** Within fifteen (15) days after written request from Landlord, Tenant shall execute and deliver to Landlord or Landlord's designee, a written statement certifying (a) that this Lease is unmodified and in full force and effect, or is in full force and effect as modified and stating the modifications; (b) the amount of Base Rent and the date to which Base Rent and additional rent have been paid in

advance; (c) the amount of any security deposited with Landlord; and (d) that Landlord is not in default hereunder or, if Landlord is claimed to be in default, stating the nature of any claimed default. Any such statement may be relied upon by a purchaser, assignee or lender. Tenant's failure to execute and deliver such statement within the time required shall at Landlord's election be a default under this Lease and shall also be conclusive upon Tenant that: (1) this Lease is in full force and effect and has not been modified except as represented by Landlord; (2) there are no uncured defaults in Landlord's performance and that Tenant has no right of offset, counter-claim or deduction against Rent; and (3) not more than one month's Rent has been paid in advance.

27. **TRANSFER OF LANDLORD'S INTEREST.** In the event of any sale or transfer by Landlord of the Premises, Building or Project, and assignment of this Lease by Landlord, Landlord shall be and is hereby entirely freed and relieved of any and all liability and obligations contained in or derived from this Lease arising out of any act, occurrence or omission relating to the Premises, Building, Project or Lease occurring after the consummation of such sale or transfer, providing the purchaser shall expressly assume all of the covenants and obligations of Landlord under this Lease. If any security deposit or prepaid Rent has been paid by Tenant, Landlord shall transfer the security deposit or prepaid Rent to Landlord's successor and upon such transfer, Landlord shall be relieved of any and all further liability with respect thereto.

28. **DEFAULT.**

(a) Tenant's Default. The occurrence of any one or more of the following events shall constitute a default and breach of this Lease by Tenant:

(i) If Tenant abandons or vacates the Premises; or

(ii) If Tenant fails to pay any Rent or any other charges required to be paid by Tenant under this Lease and such failure continues for ten (10) days after notice of such failure to pay rent such payment is due and payable; or

(iii) If Tenant fails to promptly and fully perform any other covenant, condition or agreement contained in this Lease and such failure continues for thirty (30) days after written notice thereof from Landlord to Tenant unless such breach cannot be remedied within thirty (30) days in which case, if Tenant has begun such remedy within the thirty (30) day period and diligently proceeds to its completion, the continuation of the breach after thirty (30) days shall not be a default under this Lease; or

(iv) If a writ of attachment or execution is levied on this Lease or on any of Tenant's Property; or

(v) If Tenant makes a general assignment for the benefit of creditors, or provides for an arrangement, composition, extension or adjustment with its creditors; or

(vi) If Tenant files a voluntary petition for relief or if a petition against Tenant in a proceeding under the federal bankruptcy laws or other insolvency laws is filed and not withdrawn or dismissed within forty-five (45) days thereafter, or if under the provisions of any law providing for reorganization or winding up of corporations, any court of competent jurisdiction assumes jurisdiction, custody or control of Tenant or any substantial part of its property and such jurisdiction, custody or control remains in force unrelinquished, unstayed or unterminated for a period of forty-five (45) days; or

(vii) If in any proceeding or action in which Tenant is a party, a trustee, receiver, agent or custodian is appointed to take charge of the Premises or Tenant's Property (or has the authority to do so) for the purpose of enforcing a lien against the Premises or Tenant's Property; or

(viii) If Tenant is a partnership or consists of more than one (1) person or entity, if any partner of the partnership or other person or entity is involved in any of the acts or events described in subparagraphs

d through g above.

(b) Remedies. In the event of Tenant's default hereunder, then in addition to any other rights or remedies Landlord may have under any law, Landlord shall have the right, at Landlord's option, without further notice or demand of any kind to do the following:

(i) Terminate this Lease and Tenant's light to possession of the Premises and reenter the Premises and take possession thereof, and Tenant shall have no further claim to the Premises or under this Lease; or

(ii) Continue this Lease in effect, reenter and occupy the Premises for the account of Tenant, and collect any unpaid Rent or other charges which have or thereafter become due and payable; or

(iii) Reenter the Premises under the provisions of subparagraph 28(b) (ii), above, and thereafter elect to terminate this Lease and Tenant's right to possession of the Premises.

If Landlord reenters the Premises, under the provisions of subparagraphs 28(b)(ii) or 28(b)(iii) above, Landlord shall not be deemed to have terminated this Lease or the obligation of Tenant to pay any Rent or other charges thereafter accruing, unless Landlord notifies Tenant in writing of Landlord's election to terminate this Lease (it is the intention of the parties that Landlord shall have the remedy described in California Civil Code Section 1951.4, which provides that a Landlord may continue the lease in effect after a Tenant's breach and abandonment and recover rent as it becomes due, if Tenant has the right to sublet or assign, subject only to reasonable limitations). In the event of any reentry or retaking of possession by Landlord, Landlord shall have the right, but not the obligation, to remove all or any part of Tenant's Property in the Premises and to place such property in storage at a public warehouse at the expense and risk of Tenant. If Landlord elects to relet the Premises for the account of Tenant, the rent received by Landlord from such reletting shall be applied as follows: first, to the payment of any indebtedness other than Rent due hereunder from Tenant to Landlord; second, to the payment of any costs of such reletting; third, to the payment of the cost of any alterations or repairs to the Premises; fourth to the payment of Rent due and unpaid hereunder, and the balance, if any, shall be held by Landlord and applied in payment of future Rent as it becomes due. If that portion of rent received from the reletting which is applied against the Rent due hereunder is less than the amount of the Rent due, Tenant shall pay the deficiency to Landlord promptly upon demand by Landlord. Such deficiency shall be calculated and paid monthly. Tenant shall also pay to Landlord, as soon as determined, any costs and expenses incurred by Landlord in connection with such reletting or in making alterations and repairs to the Premises, which are not covered by the rent received from the reletting.

If Landlord terminates this Lease or Tenant's right to possession of the Premises, Landlord shall have no obligation to mitigate Landlord's damages except to the extent required by applicable law. If Landlord has not terminated this Lease or Tenant's right to possession of the Premises, Landlord shall have no obligation to mitigate under any circumstances and may permit the Premises to remain vacant or abandoned. If Landlord is required to mitigate damages as provided herein: (i) Landlord shall be required only to use reasonable efforts to mitigate, which shall not exceed such efforts as Landlord generally uses to lease other space in the Building, (ii) Landlord will not be deemed to have failed to mitigate if Landlord or its affiliates lease any other portions of the Building or other projects owned by Landlord or its affiliates in the same geographic area, before reletting all or any portion of the Premises, and (iii) any failure to mitigate as described herein with respect to any period of time shall only reduce the Rent and other amounts to which Landlord is entitled to seek from Tenant hereunder by the reasonable rental value of the Premises during such period. In recognition that the value of the Building depends on the rental rates and terms of leases therein, Landlord's rejection of a prospective replacement tenant based on an offer of rentals below Landlord's published rates for new leases of comparable space at the Building at the time in question, or at Landlord's option, below the rates provided in this Lease, or containing terms less favorable than those contained herein, shall not give rise to a claim by Tenant that Landlord failed to mitigate Landlord's damages.

Should Landlord elect to terminate this Lease under the provisions of subparagraph 28(b)(i) or 28(b)(ii) above, Landlord may recover as damages from Tenant the following:

(1) Past Rent. The worth at the time of the award of any unpaid Rent which had been earned at the time of termination; plus

(2) Rent Prior to Award. The worth at the time of the award of the amount by which the unpaid Rent which would have been earned after termination until the time of award exceeds the amount of such rental loss that Tenant proves could have been reasonably avoided; plus

(3) Rent After Award. The worth at the time of the award of the amount by which the unpaid Rent for the balance of the Term after the time of award exceeds the amount of the rental loss that Tenant proves could be reasonably avoided; plus

(4) Proximately Caused Damages. Any other amount necessary to compensate Landlord for all detriment proximately caused by Tenant's failure to perform its obligations under this Lease or which in the ordinary course of things would be likely to result therefrom, including, but not limited to, any costs or expenses (including reasonable attorneys' fees), incurred by Landlord in (a) retaking possession of the Premises, (b) maintaining the Premises after Tenant's default, (c) preparing the Premises for reletting to a new tenant, including any repairs or alterations resulting from damage to the premises caused by tenant, and (d) reletting the Premises, including broker's commissions.

"The worth at the time of the award" as used in subparagraphs (1) and (2) above, is to be computed by allowing interest at the prime commercial rate then being charged by Bank of America NT & SA in effect at that time. "The worth at the time of the award" as used in subparagraph (3) above, is to be computed by discounting the amount at the discount rate of the Federal Reserve Bank situated nearest to the Premises at the time of the award plus one percent (1%).

The waiver by any party of any breach of any term, covenant or condition of this Lease shall not be deemed a waiver of such term, covenant or condition or of any subsequent breach of the same or any other term, covenant or condition. Acceptance of Rent by Landlord subsequent to any breach hereof shall not be deemed a waiver of any preceding breach other than the failure to pay the particular Rent so accepted, regardless of Landlord's knowledge of any breach at the time of such acceptance of Rent. Landlord shall not be deemed to have waived any term, covenant or condition unless Landlord gives Tenant written notice of such waiver. Acceptance of a partial payment shall not constitute a waiver under this Lease or at law or equity, including, without limitation, the right to recover possession of the Premises.

(c) Landlord's Default. If Landlord fails to perform any covenant, condition or agreement contained in this Lease within thirty (30) days after receipt of written notice from Tenant specifying such default, or if such default cannot reasonably be cured within thirty (30) days, if Landlord fails to commence to cure within that thirty (30) day period, then Landlord shall be liable to Tenant for any damages sustained by Tenant as a result of Landlord's breach; provided, however, it is expressly understood and agreed that if Tenant obtains a money judgment against Landlord resulting from any default or other claim arising under this Lease, that judgment shall be satisfied only out of the rents, issues, profits, and other income actually received on account of Landlord's right, title and interest in the Premises, Building or Project, and no other real, personal or mixed property of Landlord (or of any of the partners which comprise Landlord, if any) wherever situated, shall be subject to levy to satisfy such judgment. If, after notice to Landlord of default, Landlord (or any first mortgagee or first deed of trust beneficiary of Landlord) fails to cure the default as provided herein, then Tenant shall have the right to cure that default at Landlord's expense. Tenant shall not have the right to terminate this Lease or to withhold, reduce or offset any amount against any payments of Rent or any other charges due and payable under this Lease except as otherwise specifically provided herein.

29. **BROKERAGE FEES.** Landlord and Tenant each represents and warrants to the other party that it has not authorized or employed, or acted by implication to authorize or employ, any real estate broker or salesman to act for it in connection with this Lease, except for the brokers listed in Section 2 above and no other broker is in any way entitled to any broker's fee or other payment in connection with this Lease. Landlord is solely responsible for payment of any broker's fee or other payment owed to the brokers listed in Section 2 above. Landlord and Tenant

shall each indemnify, defend and hold the other party harmless from and against any and all claims by any real estate broker or salesman whom the indemnifying party authorized or employed, or acted by implication to authorize or employ, to act for the indemnifying party in connection with this Lease.

30. **NOTICES.** All notices, approvals and demands permitted or required to be given under this Lease shall be in writing and deemed duly served or given if personally delivered or sent by certified or registered U.S. mail, postage prepaid, and addressed as follows: (a) if to Landlord, to Landlord's Mailing Address and to the building manager, and (b) if to Tenant, to Tenant's Mailing Address; provided, however, notices to Tenant shall be deemed duly served or given if delivered or mailed to Tenant at the Premises. Landlord and Tenant may from time to time by notice to the other designate another place for receipt of future notices.

31. **GOVERNMENT ENERGY OR UTILITYCONTROLS.** In the event of imposition of federal, state or local government controls, rules, regulations, or restrictions on the use or consumption of energy or other utilities during the Term, both Landlord and Tenant shall be bound thereby. In the event of a difference in interpretation by Landlord and Tenant of any such controls, the interpretation of Landlord shall prevail, and Landlord shall have the right to enforce compliance therewith, including the right of entry into the Premises to effect compliance.

32. **RELOCATION OF PREMISES.** Landlord shall have the right to relocate the Premises to another part of the Building in accordance with the following:

(a) The new premises shall be substantially the same in size, dimensions, construction, decor and nature as the Premises described in this Lease, and the relocation occurs after the Commencement Date, shall be placed in that condition by Landlord at its cost, including Tenant Improvements made by Tenant as of the date of relocation.

(b) Landlord shall give Tenant at least sixty (60) days written notice of Landlord's intention to relocate the Premises.

(c) As nearly as practicable, the physical relocation of the Premises shall take place on a weekend and shall be complete before the following Monday. If the physical relocation has not been completed in that time, Base Rent shall abate in full from the time the physical relocation commences to the time it is completed. Upon completion of such relocation, the new premises shall become the "Premises" under this Lease,

(d) All reasonable costs incurred by Tenant as a result of the relocation shall be paid by Landlord. Landlord will cause to be constructed, in the space where Tenant is to be relocated and prior to Tenant's actual relocation, improvements substantially equivalent to the tenant improvements made by Tenant as of the date of Tenant's relocation

(e) If Tenant, in its sole discretion, has agreed to reduction in the size of the Premises, base Rent shall be reduced proportionately.

(f) The parties hereto shall immediately execute an amendment to this Lease setting forth the relocation of the Premises and the reduction of Base Rent, if any.

33. **PARKING.** Tenant shall be allocated the number of parking spaces identified in Section 2(o). Tenant shall use the Building's parking facilities in common with other tenants of the Building upon terms and conditions as may from time to time be established by Landlord. Tenant agrees not to overburden the parking facilities and agrees to cooperate with Landlord and other Tenants in the use of the parking facilities. Landlord reserves the right in its absolute discretion to determine whether the parking facilities are becoming crowded and to reallocate and assign parking spaces among Tenant and the other tenants, to assign spaces for vanpool and carpool vehicles, and to alter, relocate, reduce or otherwise change the parking facilities and to take measures with respect to the parking area from time to time in order to comply with any applicable governmental ordinance, law or regulation. Landlord shall have the right, in addition to pursuing any other legal remedy available, to tow any vehicle belonging to Tenant or Tenant's employees which is not in compliance with the published regulations for the parking facility

then in effect if a violation continues after the first notice of such violation, at the expense of Tenant; nothing in this Lease, however, shall require Landlord to tow parked cars or take other actions to free occupied spaces for Tenant's use. Landlord shall not be liable for any claims, losses, damages, expenses or demands with respect to injury or damage to the vehicles of Tenant or Tenant's customers or employees that park in the parking areas of the Property, except for such loss or damage as may be caused by Landlord's gross negligence or willful misconduct, and Tenant agrees to indemnify, defend, protect and hold harmless Landlord from and against any such claim, loss, damage, demand, cost or expense, including without limitation, reasonable attorneys' fees and legal expenses.

34. **QUIET ENJOYMENT.** Tenant, upon paying the Rent and performing all of its obligations under this Lease, shall peaceably and quietly enjoy the Premises, subject to the terms of this Lease and to any mortgage, lease, or other agreement to which this Lease may be subordinate.

35. **OBSERVANCE OF LAW.** Tenant shall not use the Premises or permit anything to be done in or about the Premises which will in any way conflict with any law, statute, ordinance or governmental rule or regulation now in force or which may hereafter be enacted or promulgated. Tenant shall, at its sole cost and expense, promptly comply with all laws, statutes, ordinances and governmental rules, regulations or requirements now in force or which may hereafter be in force, and with the requirements of any board of fire insurance underwriters or other similar bodies now or hereafter constituted, relating to, or affecting the condition, use or occupancy of the Premises, excluding structural changes not related to or affected by Tenant's improvements or acts. The judgment of any court of competent jurisdiction or the admission of Tenant in any action against Tenant, whether Landlord is a party thereto or not, that Tenant has violated any law, ordinance or governmental rule, regulation or requirement, shall be conclusive of that fact as between Landlord and Tenant.

36. **BANKRUPTCY.** If Tenant shall file a petition in bankruptcy under any Chapter of the Bankruptcy Act as then in effect, or if Tenant be adjudicated a bankrupt in involuntary bankruptcy proceedings and such adjudication shall not have been vacated within sixty (60) days from the date thereof, or if a receiver or trustee be appointed of Tenant's property and the order appointing such receiver or trustee not be set aside or vacated within thirty (30) days after the entry thereof, or if the Tenant shall assign Tenant's estate or effects for the benefit of creditors, or if this Lease shall otherwise by operation of law devolve or pass to any person or persons other than Tenant, then and in any such event Landlord may, if Landlord so elects, with notice of such election, forthwith terminate this Lease, and notwithstanding any other provisions of this Lease, Landlord, in addition to any and all rights and remedies allowed by law or equity, shall upon such termination be entitled to recover damages in the amount provided in Section 27(b) above and neither Tenant nor any person claiming through or under Tenant or by virtue of any statute or order of any court shall be entitled to possession of the Premises but shall forthwith quit and surrender the Premises to Landlord. Nothing herein contained shall limit or prejudice the right of Landlord to prove and obtain as damages by reason of any such termination an amount equal to the maximum allowed by any statute or rule of law in effect at the time when, and governing the proceedings in which, such damages are to be proved, whether or not such amount be greater, equal to, or less than the amount of damages recoverable under the provisions of this Section 36.

37. **FORCE MAJEURE.** Any prevention, delay or stoppage of work to be performed by Landlord or Tenant which is due to strikes, labor disputes, inability to obtain labor, materials, equipment or reasonable substitutes therefor, acts of God, governmental restrictions or regulations or controls, judicial orders, enemy or hostile government actions, civil commotion, fire or other casualty, or other causes beyond the reasonable control of the party obligated to perform hereunder, shall excuse performance of the work by that party for a period equal to the duration of that prevention, delay or stoppage. Nothing in this Section 37 shall excuse or delay Tenant's obligation to pay Rent or other charges under this Lease.

38. **LIMITATION ON LIABILITY.** In consideration of the benefits accruing hereunder, Tenant and all successors and assigns covenant and agree that, in the event of any actual or alleged failure, breach or default hereunder by Landlord:

(a) Notwithstanding anything to the contrary contained in this Lease or in any exhibits, Riders or addenda hereto attached (collectively the "Lease Documents"), it is expressly understood and agreed by and between

the parties hereto that: (i) the recourse of Tenant or its successors or assigns against Landlord with respect to the alleged breach by or on the part of Landlord of any representation, warranty, covenant, undertaking or agreement contained in any of the Lease Documents or otherwise arising out of Tenant's use of the Premises or the Building (collectively, "Landlord's Lease Undertakings") shall extend only to Landlord's interest in the real estate of which the Premises demised under the Lease Documents are a part ("Landlord's Real Estate") and not to any other assets of Landlord or its constituent members; (ii) except to the extent of Landlord's interest in Landlord's Real Estate, no personal liability or personal responsibility of any sort with respect to any of Landlord's Lease Undertakings or any alleged breach thereof is assumed by, or shall at any time be asserted or enforceable against, Landlord, its constituent members, or against any of their respective directors, officers, employees, agents, constituent members, beneficiaries, trustees or representatives; and (iii) in no event shall Landlord be liable to Tenant for special, indirect or consequential damages, including gross profits, arising hereunder.

(b) No member, partner, stockholder, director, officer, employee or beneficiary or trustee (collectively, "Member") of Landlord shall be sued or named as a party in any suit or action (except as may be necessary to secure jurisdiction over Landlord);

(c) No service of process shall be made against any Member of Landlord (except as may be necessary to secure jurisdiction over Landlord);

(d) No Member of Landlord shall be required to answer or otherwise plead to any service of process;

(e) No judgment will be taken against any Member of Landlord;

(f) Any judgment taken against any Member of Landlord may be vacated and set aside at any time nunc pro tunc;

(g) Except for the Building, no writ of execution will ever be levied against the assets of any Member of Landlord;

(h) These covenants and agreements are enforceable both by Landlord and also by any Member of Landlord.

39. **CURING TENANT'S DEFAULTS.** If Tenant defaults in the performance of any of its obligations under this Lease, Landlord may (but shall not be obligated to) without waiving such default, perform the same for the account at the expense of Tenant. Tenant shall pay Landlord all reasonable direct costs of such performance promptly upon receipt of a bill therefor.

40. **SIGN CONTROL.** Tenant shall not affix, paint, erect or inscribe any sign, projection, awning, signal or advertisement of any kind to any part of the Premises, Building or Project, including without limitation, the inside or outside of windows or doors, without the written consent of Landlord. Landlord shall have the right to remove any signs or other matter, installed without Landlord's permission, without being liable to Tenant by reason of such removal, and to charge the cost of removal to Tenant as additional rent hereunder, payable within ten (10) days of written demand by Landlord.

41. **MISCELLANEOUS.**

(a) Accord and Satisfaction, Allocation of Payments. No payment by Tenant or receipt by Landlord of a lesser amount than the Rent provided for in this Lease shall be deemed to be other than on account of the earliest due Rent, nor shall any endorsement or statement on any check or letter accompanying any check or payment as Rent be deemed an accord and satisfaction, and Landlord may accept such check or payment without prejudice to Landlord's right to recover the balance of the Rent or pursue any other remedy provided for in this Lease. In connection with the foregoing, Landlord shall have the absolute right in its sole discretion to apply any payment received from Tenant to any account or other payment of Tenant then not current and due or delinquent.

(b) Addenda. If any provision contained in an addendum to this Lease is inconsistent with any other provision herein, the provision contained in the addendum shall control, unless otherwise provided in the addendum.

(c) Attorneys' Fees. If any action or proceeding is brought by either party against the other pertaining to or arising out of this Lease, the finally prevailing party shall be entitled to recover all costs and expenses, including reasonable attorneys' fees, incurred on account of such action or proceeding.

(d) Captions, Sections and Section Numbers. The captions appearing within the body of this Lease have been inserted as a matter of convenience and for reference only and in no way define, limit or enlarge the scope or meaning of this Lease. All references to Section and Section Numbers refer to sections and Section Numbers in this Lease.

(e) Changes Requested by Lender. Neither Landlord or Tenant shall unreasonably withhold its consent to changes or amendments to this Lease requested by the lender on Landlord's interest, so long as these changes do not alter the basic business terms of this Lease or otherwise materially diminish any rights or materially increase any obligations of the party from whom consent to such charge or amendment is requested.

(f) Choice of Law. This Lease shall be construed and enforced in accordance with the laws of the State of California.

(g) Consent. Notwithstanding anything contained in this Lease to the contrary, Tenant shall have no claim, and hereby waives the right to any claim against Landlord for money damages by reason of any reasonable refusal, withholding or delaying by Landlord of any consent, approval or statement of satisfaction, in circumstances where Landlord is entitled to refuse, withhold or delay its consent or approval and in such event, Tenant's only remedies therefor shall be an action for specific performance, injunction or declaratory judgment to enforce any right to such consent, etc.

(h) Corporate Authority. If Tenant is a corporation, each individual signing this Lease on behalf of Tenant represents and warrants that he is duly authorized to execute and deliver this Lease on behalf of the corporation, and that this Lease is binding on Tenant in accordance with its terms. Tenant shall, at Landlord's request, deliver a certified copy of a resolution of its board of directors authorizing such execution.

(i) Counterparts. This Lease may be executed in multiple counterparts, all of which shall constitute one and the same Lease.

(j) Execution of Lease; No Option. The submission of this Lease to Tenant shall be for examination purposes only, and does not and shall not constitute a reservation of or option for Tenant to lease, or otherwise create any interest of Tenant in the Premises or any other premises within the Building or Project. Execution of this Lease by Tenant and its return to Landlord shall not be binding on Landlord notwithstanding any time interval, until Landlord has in fact signed and delivered this Lease to Tenant.

(k) Furnishing of Financial Statements; Tenant's Representations. In order to induce Landlord to enter into this Lease Tenant agrees that it shall promptly furnish Landlord, from time to time but no more than annually, upon Landlord's written request, with an audited financial statement reflecting Tenant's current financial condition. Tenant represents and warrants that all financial statements, records and information furnished by Tenant to Landlord in connection with this Lease are true, correct and complete in all respects, to the best of its knowledge.

(l) Further Assurances. The parties agree to promptly sign all documents reasonably requested to give effect to the provisions of this Lease.

(m) Mortgagee Protection. Tenant agrees to send by certified or registered mail to any first mortgagee or first deed of trust beneficiary of Landlord whose address has been furnished to Tenant, a copy of any notice of default served by Tenant on Landlord. If Landlord fails to cure such default within the time provided for in

this Lease, such mortgagee or beneficiary shall have an additional thirty (30) days to cure such default; provided that if such default cannot reasonably be cured within that thirty (30) day period, then such mortgagee or beneficiary shall have such additional time to cure the default as is reasonably necessary under the circumstances.

(n) Prior Agreements; Amendments. This Lease contains all of the agreements of the parties with respect to any matter covered or mentioned in this Lease, and no prior agreement or understanding pertaining to any such matter shall be effective for any purpose. No provisions of this Lease may be amended or added to except by an agreement in writing signed by the parties or their respective successors in interest.

(o) Recording. Tenant shall not record this Lease without the prior written consent of Landlord. Tenant, upon the request of Landlord, shall execute and acknowledge a "short form" memorandum of this Lease for recording purposes.

(p) Severability. A final determination by a court of competent jurisdiction that any provision of this Lease is invalid shall not affect the validity of any other provision, and any provision so determined to be invalid shall, to the extent possible, be construed to accomplish its intended effect.

(q) Successors and Assigns. This Lease shall apply to and bind the heirs, personal representatives, and permitted successors and assigns of the parties.

(r) Time of the Essence. Time is of the essence of this Lease.

(s) No Construction Against Drafter. The provisions of this Lease shall be construed in accordance with the fair meaning of the language used and shall not be strictly construed against either party. If the parties delete any provision appearing in the original draft of this Lease, this Lease will be interpreted as if the deleted language were never a part of this Lease.

(t) Waiver. No delay or omission in the exercise of any right or remedy of Landlord upon any default by Tenant shall impair such right or remedy or be construed as a waiver of such default.

(u) Compliance. The parties hereto agree to comply with all applicable federal, state and local laws, regulations, code ordinances and administrative orders having jurisdiction over the parties, property or the subject matter of this agreement including, but not limited to, the 1964 Civil Rights Act and all amendments thereto, the Foreign Investment In Real Property Tax Act, the Comprehensive Environmental Response Compensation and Liability Act, and The Americans With Disabilities Act.

The receipt and acceptance by Landlord of delinquent Rent shall not constitute a waiver of any other default; it shall constitute only a waiver of timely payment for the particular Rent payment involved.

No act or conduct of Landlord, including, without limitation, the acceptance of keys to the Premises, shall constitute an acceptance of the surrender of the Premises by Tenant before the expiration of the Term. Only a written notice from Landlord to Tenant shall constitute acceptance of the surrender of the Premises and accomplish a termination of the Lease.

Landlord's consent to or approval of any act by Tenant requiring Landlord's consent or approval shall not be deemed to waive or render unnecessary Landlord's consent to or approval of any subsequent act by Tenant.

Any waiver by Landlord of any default must be in writing and shall not be a waiver of any other default concerning the same or any other provision of the Lease.

42. **EXHIBITS AND ADDENDA.** The exhibits and addenda listed below are incorporated by reference in this Lease:

Exhibit A — Floor Plan showing the Premises.

Exhibit A-1 — Space Plan.
Exhibit A-2 — Site Plan of the Project.
Exhibit A-3 — Building Shell.
Exhibit A-4 — Improvement Specifications.
Exhibit B — Work Letter Agreement.
Exhibit C — Rules and Regulations.
Exhibit D — Janitorial Specifications.
Addenda — Paragraphs 42 – 47

The parties hereto have executed this Lease as of the dates set forth below.

Landlord:
Marvin L. Oates, Trustee of the Marvin L. Oates Trust, dated March 7, 1995, as Amended and Restated December 20, 2001 and Frank C. Ramos and Joanne M. Ramos as husband and wife

Tenant:
Arcadia Biosciences, Inc., an Arizona Corporation

By: /s/
Roy Hodges, President

Date:

Marvin L. Oates, Trustee of the Marvin L. Oates Trust, dated March 7, 1995, as Amended and Restated December 20, 2001

By: /s/
Frank C. Ramos, husband

By: /s/
Joanne M. Ramos, wife

Date: _____

LEASE ADDENDUM

To that certain Office Lease

Dated as of **January 31, 2003**

Marvin L. Oates, Trustee of the Marvin L. Oates Trust, dated March 7, 1995, as Amended and Restated December 20, 2001 and Frank C. Ramos and Joanne M. Ramos as husband and wife, as Landlord

and

Arcadia Biosciences, Inc. as Tenant

42. **ARBITRATION.** Any controversy or claim arising out of or relating to the tenant improvements contemplated by this Lease shall be settled by three arbitrators in accordance with the commercial rules of the American Arbitration Association. Judgement on the award rendered by the arbitrators may be entered in any court having jurisdiction over the dispute. The cost of the arbitration shall be paid by the losing party.

The arbitrator's authority to grant remedies shall be limited to those remedies that could be granted or awarded by a judge of the superior court of the state of California, applying California law to the claims asserted. The arbitrator shall prepare and provide to the parties a written decision on all matters subject to the arbitration, including factual findings and the reasons that form the basis of the arbitrator's decision. The arbitrator shall not have the power to commit errors of law, and the award of the arbitrator shall be vacated or corrected for any such error or any other grounds specified in California Code of Civil Procedure Section 1286.2 or Section 1286.6. The award of the arbitrator shall be mailed to the parties no later than thirty (30) days after the close of the arbitration hearing. The arbitration proceedings shall be reported by a certified shorthand court reporter. Written transcripts of the proceedings shall be prepared and made available to the parties.

The parties shall each have the right to file with a court of competent jurisdiction an application for temporary or preliminary injunctive relief, writ of attachment, unlawful detainer, writ of possession, temporary protective order, or appointment of a receiver if the arbitration award to which the applicant may be entitled may be rendered ineffectual in the absence of such relief or if there is no other adequate remedy. This application shall not waive a party's arbitration rights under this Lease.

43. **DISCLOSURES.** The United States Congress has enacted the Americans with Disabilities Act. Among other things, this act is intended to make many business establishments equally accessible to persons with a variety of disabilities; modifications to real property may be required. State and local laws also may mandate changes. The real estate brokers in this transaction are not qualified to advise you as to what, if any, changes may be required now, or in the future. Owner and Tenant should consult the attorneys and qualified design professionals of their choice for information regarding these matters. Real estate brokers cannot determine which attorneys or design professionals have the appropriate expertise in this area. Various construction materials may contain items that have been or may, in the future, be determined to be hazardous (toxic) or undesirable and may need to be specifically treated/handled or removed. For example, some transformers and other electrical components contain PCB's and asbestos has been used in components such as fireproofing, heating, and cooling systems, air duct insulation, spray-on and tile acoustical materials, linoleum, floor tiles, roofing dry wall and plaster. Due to prior or current uses of the Property or in the area, the Property may have hazardous or undesirable metals, minerals, chemicals, hydrocarbons, or biological or radioactive items (including electric and magnetic fields) in soil, water, building components, above or below-ground containers or elsewhere in areas that may or may not be accessible or noticeable. Such items may not leak or otherwise be released. Real estate agents have no expertise in the detection or correction of hazardous or undesirable items. Expert inspections are necessary. Current or future laws may require clean up by past, present and/or future owners and/or operators. It is the responsibility of the Landlord and Tenant to retain qualified experts to detect and correct such matters and to consult with legal counsel of their choice to determine what provision, if any, they may wish to include in transaction documents regarding the Property.

Landlords are required under California Health and Safety Code Section 25915 at seq. to disclose reports and surveys regarding asbestos to certain persons, including their employees, contractors, co-owners, purchasers and tenants. Tenants have similar disclosure obligations. Landlords and Tenants have additional hazardous materials disclosure responsibilities to each other under California Health and Safety Code Section 25359.7 and other California laws. Consult your attorney regarding this matter.

44. **FLOOD.** Tenant expressly acknowledges and assumes the risk that the Premises and improvements may be subject to flooding due to their location in a flood plain. Tenant unconditionally waives any flood-related property damage claim asserting liability on the part of the Landlord, Landlord's predecessors and successors-in-interest, the County of Sacramento or its officers, agents, or employees premised on the issuance of a permit for construction of the improvements, whether or not the issuance of this permit is due to the negligence of Landlord, Landlord's predecessors or successors, the City or its officers, agents or employees.

45. **OPTION TO RENEW.** Lessor hereby grants to Lessee the option to renew this lease agreement and all the provisions, conditions and terms contained therein, except monthly base rent, for up to three (3) three (3) year terms immediately following the expiration of this initial term, subject to the following:

a. This lease shall be in full force and effect at the time notice of exercise option is given.

b. Lessee shall not be in default under any provision of this lease at the time notice of exercise is given, or any time during the term of lease for a consecutive period of more than thirty (30) days.

c. Lessee shall give Lessor a written notice irrevocably exercising the option at least one hundred twenty (120) days prior to the last day of the current lease term. If Lessee does not exercise this option in the time period provided, the option shall become null and void and be of no further effect.

d. The monthly base rent for the option period shall be based upon the currently prevailing rent for comparable space at the time this option to extend is exercised except that the maximum per square foot amount shall not increase by more than five (5) cents per rentable square foot over the proceeding year. Base Rent shall not be increased more than once per year of each year of any renewal Term and only as set forth in this subsection.

46. **RIGHT OF FIRST REFUSAL.** With the exception of lease renewals by existing tenants, the Lessee is hereby granted, by the Lessor, the right of first refusal to lease the ± 2,500 usable square feet of space immediately adjacent to the West Side of Lessee's demised premises. See Exhibit A. This right of first refusal to lease is in effect beginning with the commencement of the Lease and will expire after the first year of the Lease, provided:

a. The Lessee is not in default under any of the conditions and provisions of this lease. Lessee shall not be in default under any provision of this lease at the time notice of exercise is given, or any time during the term of lease for a consecutive period of more than thirty (30) days.

b. The length of time left on Lessee's then current lease term shall not be less than the longer of: (1) two (2) years; or (2) equal to the lease term proposed in the third party offer.

c. The Lessee agrees to lease said adjacent space in its entirety. The Lessor shall not be required to make any adjustments in the demising walls, or other tenant improvements unless by separate agreement between the parties at such time.

d. Lessor hereby agrees to provide written notice defining the terms and conditions of the proposed lease.

The Lessee shall, within five (5) days after receipt of the Lessor's notice that a third party offer has been received for the space, indicate, in writing, its agreement to lease said space pursuant to the terms and conditions of Lessee's existing lease. If Lessee does not give notice in writing to Lessor within five (5) days of its intent to lease the

adjacent space, Lessor thereafter shall have the right to lease said space to a third party at the rent rate stated in the notice and Lessee's right of first refusal shall then become null and void.

47. **SECURITY DEPOSIT/LETTER OF CREDIT.** At Tenant's election, in lieu of delivering cash for the Security Deposit pursuant to Section 8 of the Lease, Tenant may elect to deliver simultaneously with the execution of the Lease, to Landlord (as Beneficiary) an irrevocable, unconditional and transferable letter of credit (the "Letter of Credit"). The Letter of Credit shall be issued by and drawn upon a commercial bank or trust company with which Tenant has a business relationship (hereinafter referred to as the "Issuing Bank") and which Issuing Bank is reasonably acceptable to Landlord and which has a banking office in which the Letter of Credit may be drawn upon in Sacramento, California. The Letter of Credit shall have a term of not less than one year, be in form and content reasonably satisfactory to Landlord, be subject to the International Standby Practices 1998, International Chamber of Commerce Publication No. 590, be for the account of Landlord and be in the initial amount of $161,598.40 and shall reduce annually as hereafter provided. The Letter of Credit shall provide that:

a. The Issuing Bank shall pay to Landlord or its duly authorized representative an amount up to the face amount of the Letter of Credit conditioned solely upon presentation of the Letter of Credit and a sight draft in the amount to be drawn;

b. The Letter of Credit shall be automatically renewed, without amendment except for the reduction in the amount thereof as hereafter expressly set forth, for consecutive periods of one year each during the term of this Lease or any extensions thereof and extending ninety days beyond any such expiration, unless the Issuing Bank sends written notice (hereinafter referred to as the "Non-Renewal Notice") to Landlord by certified mail, return receipt requested, not less than thirty (30) days next preceding the then expiration date of the Letter of Credit, that it shall not renew such Letter of Credit;

c. Landlord, upon receipt of the Non-Renewal Notice, shall have the right, exercisable by a sight draft, to receive the moneys represented by the Letter of Credit-which moneys shall be held by Landlord as a cash security deposit pursuant to the provisions of Section 8 of the Lease; and

d. Upon Landlord's sale or transfer of all or any portion of Landlord's interest in the Property, the Letter of Credit shall be transferable one or more times by Landlord as provided herein.

In the event of a sale of Landlord's interest in the Property, Landlord shall have the right to transfer the Letter of Credit deposited hereunder to the purchaser and Landlord shall thereupon be released by Tenant from all liability for the return of such Letter of Credit. In such event, Tenant agrees to look solely to the new landlord for the return of said Letter of Credit. It is agreed that the provisions hereof shall apply to every transfer or assignment made of said Letter of Credit to a new Landlord. Tenant further agrees and acknowledges that it shall pay upon Landlord's demand, as Additional Rent, any and all costs or fees charged in connection with the Letter of Credit that arise due to (i) Landlord's sale or transfer of all or a portion of the Building; or (ii) the addition, deletion, or modification of any beneficiaries under the Letter of Credit.

Tenant covenants that it will not assign or encumber, or attempt to assign or encumber, the Letter of Credit deposited hereunder as security, and that neither Landlord nor its successors or assigns shall be bound by any such assignment, encumbrance, attempted assignment, or attempted encumbrance.

Landlord agrees that it will not draw down the proceeds of the Letter of Credit except in the event of a default by Tenant hereunder which continues after any required notice and the expiration of any applicable cure period or the receipt of notice of non-renewal of such Letter of Credit by the Issuing Bank without the Tenant having provided a substitute Letter of Credit at least seven (7) business days prior to the expiration date of the Letter of Credit meeting all requirements set forth in this Section..

The Tenant shall be obligated to maintain a Letter of Credit meeting the requirements of Section 8 during the Term of this Lease, provided, however, the amount available to be drawn under such Letter of Credit shall reduce as follows:

Beginning of Month	Amount of Reduction	Balance of Letter of Credit
		$ 161,598.40
13	$ 32,319.68	$ 129,278.72
25	$ 32,319.68	$ 96,959.04
37	$ 32,319.68	$ 64,639.36
49	$ 32,319.68	$ 32,319.68
61	$ 32,319.68	$ 0.00

In the event of an occurrence of a default under this Lease which is not cured or waived, the amount available to be drawn under the Letter of Credit shall not be reduced further and the Landlord shall have the right to draw upon the Letter of Credit as provided herein. Landlord may use, apply, or retain the proceeds of the Letter of Credit to the same extent that Landlord may use, apply, or retain the cash security deposit as set forth in Section 8 of the Lease. Landlord may draw on the Letter of Credit in whole or in part, from time to time, at Landlord's election. If Landlord partially draws down the Letter of Credit, Tenant shall, within ten (10) days after Landlord gives Tenant notice thereof, restore all amounts drawn by Landlord or substitute cash security instead. If Landlord elects to draw the full amount, but the full amount of the Letter of Credit is not required for the payment of any sum to which Landlord may become obligated by Tenant's default, or to compensate Landlord for any loss or damage which Landlord may suffer as a consequence of any default by Tenant, the balance of the proceeds drawn under the Letter of Credit shall be held by Landlord (together with any sums required to restore the amount held by Landlord to the total amount required above) as a cash security deposit and shall be treated in accordance with the provisions of Section 8 of the Lease.

Tenant hereby agrees to cooperate, at its expense, with Landlord to promptly execute and deliver to Landlord any and all modifications, amendments and replacements of the Letter of Credit, as Landlord may reasonably request to carry out the terms and conditions of Section 8.

Nothing in Section 8 shall in any manner limit the liability of Tenant under this Lease, and Landlord is reserving all rights and remedies against Tenant in the event of a default by Tenant.

Landlord:
Marvin L. Oates, Trustee of the Marvin L. Oates Trust, dated March 7, 1995, as Amended and Restated December 20, 2001 and Frank C. Ramos and Joanne M. Ramos as husband and wife

Marvin L. Oates, Trustee of the Marvin L. Oates Trust, dated March 7, 1995, as Amended and Restated December 20, 2001

By: /s/
Frank C. Ramos, husband

By: /s/
Joanne M. Ramos, wife

Date:

Tenant:
Arcadia Biosciences, Inc., an Arizona Corporation

By: /s/ Roy Hodges
Roy Hodges, President

Date: 3.17.03

/s/

Approved as to form:

Office of the General Counsel — Date

Approved as to financial terms:

/s/ — 3-17-03

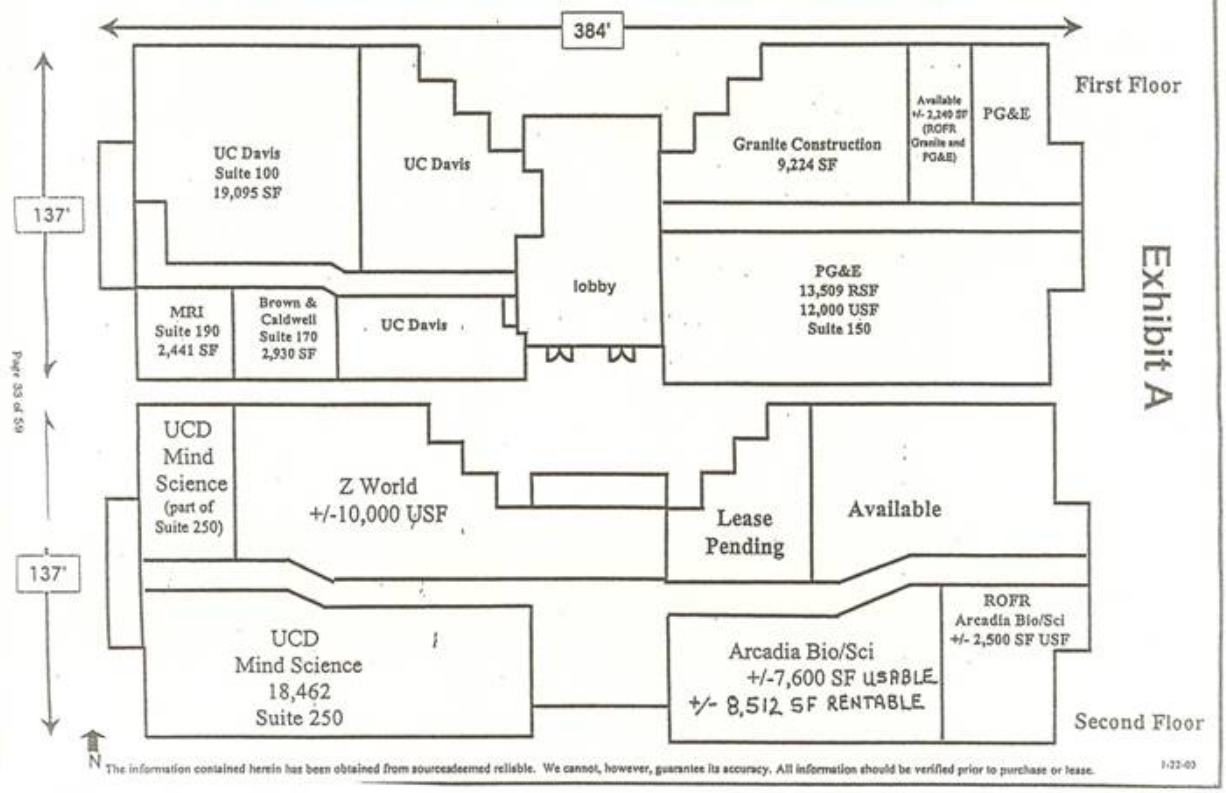
Finance — Date

No changes may be made after signatures above

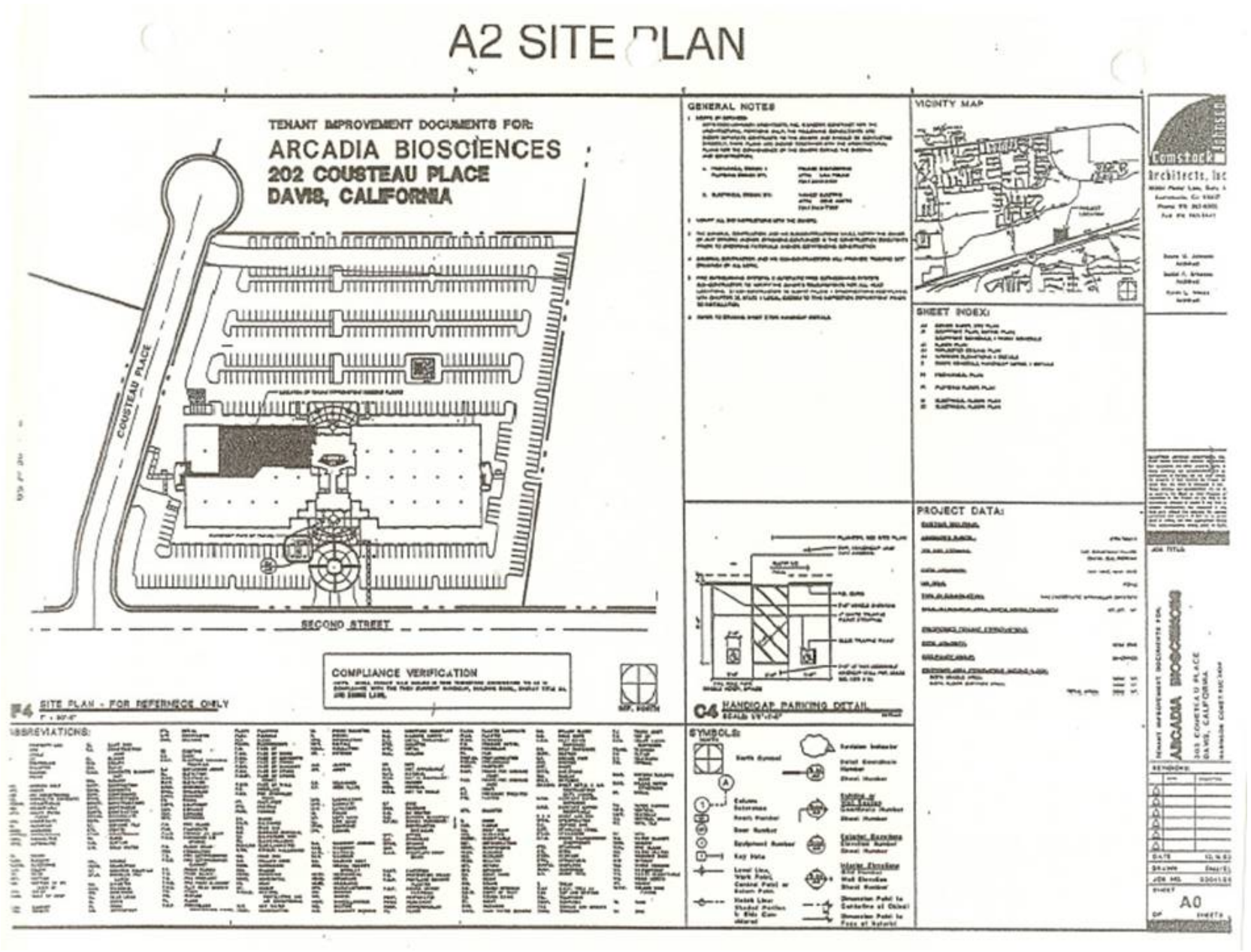
202 Cousteau Place - 105,307 SF

Davis, California

BUZZ OATES
REAL ESTATE



A2 SITE PLAN


TENANT IMPROVEMENT DOCUMENTS FOR:
ARCADIA BIOSCIENCES
202 COUSTEAU PLACE
DAVIS, CALIFORNIA
COUSTEAU PLACE
SECOND STREET
GENERAL NOTES
VICINITY MAP
SHEET INDEX
PROJECT DATA
COMPLIANCE VERIFICATION
SITE PLAN - FOR REFERENCE ONLY
HANDICAP PARKING DETAIL
ABBREVIATIONS:
SYMBOLS:
Comstock Architects, Inc
ARCADIA BIOSCIENCES
202 COUSTEAU PLACE
DAVIS, CALIFORNIA
A0

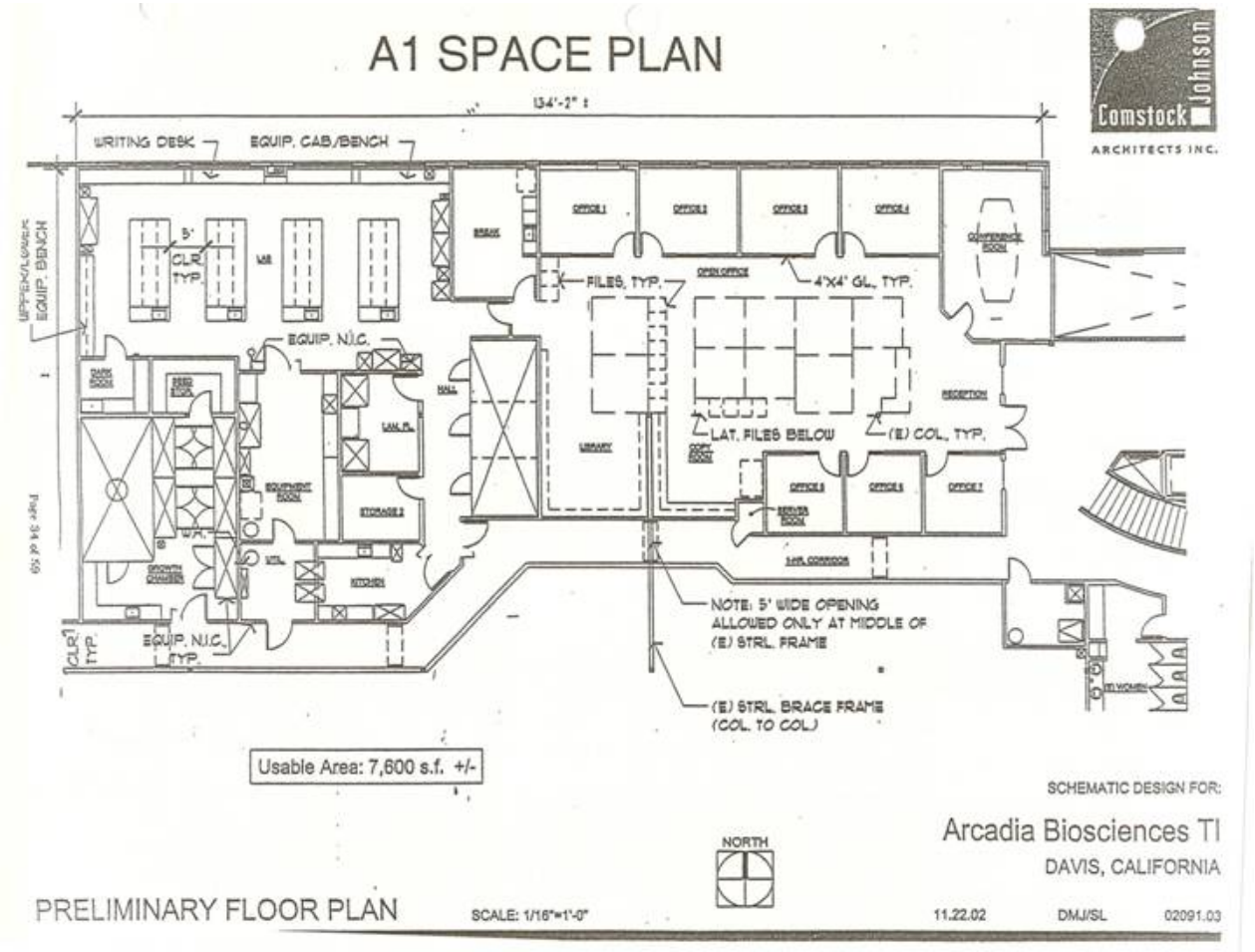


EXHIBIT A-3

DEFINITION OF "CORE AND SHELL" CONSTRUCTION

1. **Building.** All areas of the premises and all common areas shall be fully permitted by Landlord and in complete compliance with all local, state and federal building codes and regulations including the Americans with Disabilities Act necessary for occupancy as evidenced by the procurement of a Certificate of Occupancy. All areas within the Premises shall be broom clean and all systems serving and/or within the Premises shall be in good working order prior to the installation of Tenant's improvements.

2. **Foundation and Steel Frame.** The foundation and steel frame are typical for a building of this size and character and have been designed in accordance with the soil and geological conditions of the site. The steel frame of the building has been professionally engineered consistent with all current codes, regulations and engineering practices. The concrete floors of the Premises are finished in accordance with the plans and specifications for the building. Slab will need to be tested for moisture content prior to installation of flooring material. Depending on the specific flooring manufacturer's requirement for moisture content, the slab may have to be treated. The floor area of the premises is designed to accommodate a combined weight load of 80 lbs. per square foot on the second floor and 250 lb. per square foot on the ground floor. The building has been designed to accommodate a typical finished ceiling height of 9' above the finished concrete floor.

3. **Window Blinds.** Landlord will require an interior window blind system installed at all exterior windows which shall conform to the specified standard for the building. Window blinds are not included in the Building shell definition.

4. **Perimeter Walls.** The interior side of all perimeter exterior walls shall be unframed and uninsulated, in an "AS IS" condition. All columns and intermediate locations throughout the perimeter of the building and including all intermediate columns within the Premises shall not be improved.

5. **Building Core.** Vertical shaft space shall be provided and identified, for the use of Tenant within the core to accommodate riser requirements for Tenant's private telephone, electrical, data and CTV systems. Existing risers consist of one (1) 4" diameter telephone and two (2) 1½" diameter CTV conduits have been stubbed from the property line into the first floor electrical room.

Typical floor passenger elevator lobbies shall have walls taped, sanded, textured and painted. Elevator lobbies also include fire rated doors and smoke detectors, (strobe lighting if required) and general lighting as required by code and otherwise designed and constructed to comply with 1994 Uniform Building Code and Uniform Fire Code. Utility room walls are fire taped and have VCT or concrete floors. The underside of the roof deck is not insulated.

All core walls facing Tenant areas shall be framed and ready to accept drywall. The building core of the Premises includes 7' height solid core birch wood veneer or metal doors, frames and hardware. Doors, frames and hardware are provided to all stairwells, toilet rooms and service lobbies (all doors which open to the exterior of the building core). All other doors are hollow metal or as designed.

Vertical stairwell exit shafts shall be constructed as required by building code and all surfaces are to be painted.

6. **Toilet Rooms**

Landlord shall provide women's and men's toilet rooms in compliance with all code requirements and recommendations for size and quantity including the Americans with Disabilities Act and consistent with details of

design and finish developed by Landlord's architect. Men's and women's toilet room facilities are located on each floor of the building as follows.

(b) First Floor — Men

Three (3) urinals
Two (2) standard water closet stalls
One (1) handicap accessible water closet stall
One (1) handicap accessible shower
Four (4) lavatories (all handicap accessible)

(c) First Floor — Women

Five (5) standard water closet stalls
One (1) handicap water closet stall
One (1) handicap accessible shower
Four (4) lavatories (all handicap accessible)

(d) Second Floor — Men

Three (3) urinals
Two (2) standard water closet stalls
One (I) handicap accessible water closet stall
Four (4) lavatories (all handicap accessible)

(e) Second Floor — Women

Five (5) water closet stalls
One (1) handicap water closet stall
Four (4) lavatories (all handicap accessible)

Fixture count has been sized for an overall office employee building of 670 based on the 1994 Uniform Plumbing Code.

7. **HVAC System.** Landlord shall provide and operate a first class quality heating, ventilating and air conditioning system with service available on a year round basis in all occupied areas of the building. Fan rooms shall be located on each floor of the building, permitting Tenant to utilize after hours HVAC service on a floor by floor basis. All HVAC units shall be equipped with after hours control and monitoring equipment.

The building is designed for a water source heat pump system to heat and cool the occupied space. Individual zones will be served by horizontally mounted heat pump units located in the ceiling space. Since these units vary in size from 6.7 MBH cooling output to 120 MBH, the tenant improvement design has a high degree of flexibility in zone sizing.

The horizontal heat pumps are served by a condenser water loop connected to a 250 ton cooling tower and an 1825 MBH input hot water boiler located in the mechanical enclosure, with two (2) 15 HP pumps supplying the loop. These variable speed pumps supply condenser water to the heat pumps as called for by the direct digital control system.

Ventilation air is supplied through a variable speed pressurized duct system with roof mounted fans.

Landlord will provide the condenser water loop, cooling tower, boiler and pumps, only as a shell specification. All costs associated with installation of horizontal mounted heat pump units, after hours control devices and connection to water loop and duct system will be part of tenant improvement work.

The entire system is designed for the utmost in flexibility, allowing zones as small as 1000 square feet and a very high degree of energy efficiency.

8. **Lighting System.** Common areas, mechanical, electrical rooms are lighted as specified and installed by Landlord.

9. **Electrical and Power Systems.** The main power service to the building is as follows.

2500 amp, 277/480 volt, 3-phase, 4 wire, single meter with main circuit breaker and GFP protection. Two (2) 200 amp, 277/480 volt panels, and one (1) 200 amp 120/208 volt panel. Two (2) 40 HP elevators.

Connected Loads:

Mechanical Equipment	175kVA		
Elevators	86kVA		
Lighting	42kVA		
Miscellaneous	12kVA		
TOTAL	315kVA	=	380 amps

10. **Fire and Life Safety Systems.** Base building fire and life safety systems meet all local codes and regulations and all requirements of Title 24 and the Americans with Disabilities Act and is capable of being extended beyond the core to the Premises with adequate capacity to accommodate standard tenant improvements.

The shell and core building improvements include a fire sprinkler system, main loop and branch distribution piping, including mains. All laterals drops and heads as required by local code and Tenant's final layout is not included in the shell. Fire sprinkler system completed in core and stairwells as required by the 1994 Uniform Fire Code and the Sacramento County Fire Authority.

11. **Security Systems.** The building shall have a fully operable security system with card readers at stairwell, selected interior doors and all selected perimeter door monitoring and alarm annunciation.

12. **Elevators.** Two (2) hydraulic elevators each with a 2,500 lb. capacity are complete and operating. Elevators are manufactured by Dover and have an approximate speed of 125 feet per minute under full loading.

All elevator cabs are in compliance with the Americans with Disabilities Act.

13. **Parking.** The parking area shall be fully illuminated and shall be operated fully illuminated after dark.

EXHIBIT A-4

Tenant Improvement Specifications
General Requirements

1. The work under this Contract is to include all labor, materials transportation, equipment, supervision, and services necessary for and reasonably incidental to the completion of all construction work in connection with the Drawings and Specifications.

2. Applicable Codes: All materials and workmanship shall conform to the Uniform Building Code, applicable State and Federal safety orders.

3. Security of the project shall be the responsibility of the contractors during the construction period. Contractor shall maintain the construction site in a clean and orderly condition at all times.

4. Use dimensions shown rather than scale drawings.

5. In all construction areas, new and adjacent surface of gypsum board and acoustical ceiling shall be dry, free of dirt, grease, wax, polish and dust to a like-new appearance.

6. All products specified shall be installed as per manufacturer's recommendations and requirements. If there are any discrepancies, architect should be notified immediately.

7. Contractor shall field verify all existing conditions and dimensions before proceeding with work.

8. Contractor shall coordinate timing of construction and work with client to create the least amount of disturbance to the facility and its staff, as possible.

9. Upon discovery of any discrepancies, the contractor is to notify the architect at once and not proceed with work in that area until direction is given by the architect. Architect will review and give direction in expedient manner.

10. Clean-Up:
    a. Keep areas of work free from debris as work progresses.
    b. Protect work and materials of this Section prior to and during installation, and protect the installed work and materials of other trades.

I. PARTITIONS

A. Demising Wall

1. **3 5/8"** x 25 gauge **(unless 6" is required)** metal studs at 16" on center. Full height to structure above.
2. 5/8" type "X" gypsum board tenant side of wall full height to structure above.
3. R-11 3 ½ "batt insulation to ceiling height.

B. Interior Wall

1 3 5/8" x 25 gauge **(unless 6" is required)** metal studs with seismic bracing per local Building Department.
2. 5/8" type "X" gypsum board, both sides, taped top extended.
3. Acoustical insulation provided only if shown on floor plan (extra).

C. 1-Hour Partition Where Required by UBC

1 . 3 5/8" x 25 gauge **(unless 6" is required)** metal studs full height to structure above or to 1 hour ceiling as allowed by UBC. 16" o.c. to 15'0" maximum height, 16" o.c. to 20'0" maximum height.
2. 5/8" gypsum board, type "X" both sides of wall to structure above, taped top textured.

II. DOORS, FRAMES AND HARDWARE

A. Corridor Doors and Frames (Entrance to Suite)

1. Wood Door: Weyerhaeuser, DPC-1, 1-¾" thick 3'0" x 8'10" or equal **except Davis 8' 8".**

a. Face Veneer; Plain sliced **Clear Birch.**
b. Core: Timblend, Particle Board Core which complies ANSI A208. 1.
c. Side Edges: Two-ply 1-1/2" laminated outer strip, match face veneer.
d. Top and Bottom Edges: Factory sealed, poly wrapped; vertical edges to be mill option hardwood.
e. Face Assembly: Type I.
f. Core Assembly: Type II.
g. Cut Out Size: As indicated or required. Doors are to be factory machined for hardware.

2. Frame: Titan Metal Products, Inc., **or equal** Sacramento, California. 3'0"x 8'10"x 1-¾" 16 ga. Furniture steel, with fire rating and UL or FM label as required with **if specified,** 2'6" wide full height sidelight.

3. Hardware:

a.	2 pr.	Butts	BB1279 4-½" "x 4-½"x NPR x 625 (H)
b.	1 ea.	Lockset	Schlage A Series or Cal Royal L-Series
c.	1 ea.	Closer	**900 Cal Royal**
d.	1 ea.	Door Bumper	W302-S x SS 629 (Q)
e.	Smoke seal set as required.		

4. Wire glass: Hardis Bros. or approved equal ¼" thick with 0201 wire mesh on ½" square grid "Baroque".

B. Interior Doors and Frame:

1. Wood Door: **3'0" x 7'0"**

a. Face for transparent finish: Natural rotary cut birch veneer, book matched for transparent finish. End match transoms.
b. Core: Timbled, particle board core which complies ANSI A208. 1.
c. Side Edges: Two-ply-1-½" laminated outer strip, match face veneer.

d. Top and Bottom Edges: Factory sealed, poly wrapped; vertical edges to be mill option hardwood.
e. Face Assembly: Type I.
f. Core Assembly: Type II.
g. Cut Out Size: As indicated or required. Doors are to be factory machined for hardware.

2. Hardware:

a.	2 pr.	Butts	BB1279 4-½"x4-½"x 625	(H)
b.	1 ea.	Latchset Schlage A Series or Cal Royal L-Series		
c.	1 ea.	Closer	**900 Cal Royal**	
d.	1 ea.	Lockset	Schlage A Series or Cal Royal L-Series (tenant upgrade)	

3. Frame: Timely metal frame **3' 0"** x **7' 0" Brown Sugar** 1-¾" 16 GA. Furniture steel, with fire rating and UL or FM label as required.

As Required at Pairs of Doors:

4. Manual Flush Bolt: BBW 5021-24" x 5021-12".
5. Automatic Flush Bolt: Glynn-Johnson FB10 x US 26.
6. Coordinator: Glynn-Johnson COR-2 XFB-2 prime coat.

III. CEILING

A. Suspended Ceiling System - T-Bar Donn or equal

1. Acoustical panels, exposed suspension: 5/8" thick, molded, Armstrong Cortega #769 or approved equal.

a. Panel size: per drawings, color white
b. Panel edge: Square edge @ 24" x 48" panels; flush mount with grid;
c. Align pattern in same direction.

2. Height: 10'-2" unless otherwise specified.

IV. FLOOR COVERING

A. Carpet Standard

A. CARPET 1- Tenant Space: Manufacturer and Style: Designweave Carpet Mills Quality, Montara, 26 ounce. Color chosen by Tenant
B. CARPET 2- Corridor and Lobbies: Manufacturer and Style: Designweave "Ravella" 260z, color; 00268 Regal Bronze

1. Installation: Direct Glue U.O.N.
2. Roppe 4" **rubber** coved base.

3. Color as shown on finish schedule.

B. Vinyl Flooring

1. Vinyl composition tile: 12” by 12” by 1/8”; **Colors Plus by American Bilrite,** or approved equal.
2. Self-coved base: 4” high, **rubber,** Roppe or approved equal.
   A. Corners: Field-formed.

3. Adhesive: Waterproof.
4. Colors as shown on finish schedule or chosen by tenant.

V. WALL TREATMENTS

A. Paint

1. Apply texturing compound by machine to achieve medium knock down texture matching approved sample.
2. One (1) coat PVAC Sealant, one (1) coat flat latex paint **or eggshell** on walls, U.O.N. finish to be smooth of bubbles, roll marks and brush marks. (one (1) color throughout).

VI. WINDOW COVERINGS

A. Exterior Windows- “Hunter Douglas” vertical blinds. Quality: 3 1/2” wide louvers **or equal** commercial track, inside ceiling mount. Color: building standard.

B. Interior Windows- “Hunter Douglas” 1” aluminum mini blinds, **or equal.** Color: chosen by tenant.

VII. ELECTRICAL

A. Lighting

1. **Troffer fixture with acrylic lense** 2’x 4’3” lamp fluorescent light fixture with cool white Super Saver lamps and energy saving ballasts.

B. Electrical Receptacles

1. “Decora” duplex receptacle and cover plate; Color: White **or Ivory.**
2. “Decora” dedicated duplex receptacle.

C. Switches

1. “Decora” switch and cover plate; Color: White **or Ivory.**

D. Telephone and Data Lines (extra)

1. Telephone conduit from Electrical Room to Tenant Suite.
2. Junction box with pull string to above suspended ceiling.

VIII. FIRE PREVENTION

A. Automatic Sprinklers: Semi-recessed with polished chrome escutcheon.

1. Distribution as required by NFPA and Fire Marshall.

B. Fire extinguishers, surface mounted.

1. One (1) per suite (minimum as required by UFC).

IX. HEATING, VENTILATING AND AIR CONDITIONING

1. Mechanical system to be design by Sigma Engineering (916) 483-7343.

2. HVAC contractor to coordinate unit layout with furniture placement.

3. Provide adequate service access to unit.

4. Provide fire rated hose kits with flow valves, Y strainers and ball valves.

5. Coordinate with plumber to flush supply and return water lines connected to each water source heart pump prior to start up.

6. Motorized outside air dampers tied into existing system are to be installed for each unit.

7. HVAC contractor to water balance system as required.

8. HVAC contractor to provide air balance report to building owner.

9. HVAC contractor to subcontract with Performance Controls for control integration into existing direct digital control system. (530) 672-2318

10. Provide building owner with “as built” mechanical plans.

TENANT IMPROVEMENT UPGRADES

I. FINISH CARPENTRY

A. General

1. Material Grades: WIC Premium “A” Grade complying with “Manual of Millwork” of the Wood Institute of California, unless otherwise noted.
2. Lumber and plywood shall be kiln-dried to equilibrium moisture content suitable for fabrication in shop and suitable for use intended.
3. Trim, Ledges, Edge Pieces and Exposed Items: Size and profiles shown in drawings.

    a. Specie: Mahogany, White Ash or White Birch, as noted on drawings.

4. Particle Board: Stamped, suitable to receive plastic laminate finish, wood veneer or paint as noted.
5. Adhesives: Type as recommended by manufacturer for locations and materials shown.
6. Plastic Laminate: Nevamar or Wilson-Art, and shall comply with the requirements of LD-3 by NEMA.

B. Fabrication

1. Verify measurements at job site.
2. Verify details and dimension of equipment and fixtures integral with finish carpentry for proper fit and accurate alignment.
3. Coordinate details with other work supporting, adjoining, or fastening to finish carpentry items.
4. Fabricate finish carpentry in accordance with WIC Custom Grade unless otherwise noted.
5. Shop fabricate and assemble work in complete units insofar as dimensions permit shipment and installation.
6. Conceal nailing where possible and set nail heads for putty in exposed portions.
7. Thoroughly hand sand wood surfaces. Take care that cross sanding is removed by final sanding in direction of grain; ease “knife-edge” comers by sanding. Wood surface shall be free from dust, glue, stains, and other foreign matter and in proper condition to receive finish.
8. Perform corrective measures necessitated by non-conformance with WIC standards. The Architect’s opinion will govern discrepancies.

C. Casework

1. Exposed and semi-exposed surfaces, wood veneer Rift Cut-Transparent (Stain) finish.
2. Color of transparent (stain) finish as selected by Owner and/or Architect.
3. Refer above for construction materials not otherwise noted.
4. All shelves to 32” long shall be ¾” thick minimum and all shelves 33” and longer shall be 1” thick minimum. Edge band full perimeter of all shelves.
5. Counter tops shall be a one piece ¾” thick particle board with plastic laminate overlay with 4” high top mount splash and self edge front, unless otherwise indicated. Shall comply with WIC Premium Grade construction, refer to WIC Manual of Millwork, Section 26.

D. Casework Hardware

1. Hardware shall be furnished and installed as required to provide a complete casework installation.
2. Hardware shall be 626 finish unless specified otherwise.
3. The following hardware is listed to establish quality of product, the substitutions shall be submitted to Architect for approval before casework construction.

    a. Hinges: Grass American, Inc., 1006 System concealed, for Overlay and Half Overlay construction. Self-closing, screw-on, center to center placement not to exceed 24”.
    b. Door & Drawer Pulls: HAFELE, Wire Pulls, 5/16” diameter x 1-5/16” projection No. WP4 with 4” centers and 26D finish.
    c. Magnetic Catches: AMEROCK, No. BPQ793PT, holding power to 12 lbs. 2”L x ¾”W x ½”H.
    d. Drawer Slides: GRANT No. 329 full extension slide, load capacity 100 lbs. per pair, with steel ball bearings.
    e. Pilaster Standards: KV no. KV255ALBR2.
    f. Adjustable Shelf Clip Supports: KV No. KV256WAL.
    g. Locks: National Lock Hardware No. C8062-14A with reversible key. Keyed the same or differently as noted on submittals. Drawers and doors shall be lockable as noted on drawings by Architect.

E. Execution

1. Installation General Requirements

    a. Do not install casework or millwork until wet operations are completed and concrete, work has thoroughly dried out, and millwork has been primed or sealed under “Painting Work”. Reseal cut edges, surfaces and end in approved manner.
    b. Trim members: Install level, plumb and true, with members neatly and accurately scribed in place. Install standing trim and single lengths, running trim in as long lengths as practicable for species specified. Butt joints beveled together, exterior angles coped.
    c. Nailing: Set nails (countersink) and fill with matching filler.
    d. Workmanship: Exposed surfaces of finish carpentry shall be free from tool marks, torn grain, cross sanding, or any workmanship defects that cannot be concealed by specified painter’s finish.

2. Install Casework

a. Install casework securely, plumb, level, true and straight with no distortions. Shim as required using concealed shims.
b. Where casework abuts other finished work, scribe and cut for accurate fit. Before making cutouts, drill pilot holes at corner.
c. Install finish hardware in accordance with its manufacturer printed instructions.
d. Repair damages or defective work as directed. Adjust and lubricate hardware for proper operation.

II. PARTITIONS

A. Restroom Wall

1. 3-5/8”x 25 gauge metal studs to 6” above suspended ceiling height with seismic bracing.
2. 5/8” gypsum board both sides, water resistant type where required by Section 510(b)4712 of UBC, taped with smooth finish.
3. R-11 glass fiber batt insulating to full height of partition.

B. Acoustical Partitions

1. 3-5/8” x 25 gauge metal studs to 6” above suspended ceiling height with seismic bracing.
2. 5/8” gypsum board both sides, taped with smooth finish.
3. R-11 glass fiber batt insulation for full height of partition.

III. CEILING

A. Suspended Ceiling System Upgrade

1. Ceiling Tile: USG 2310 24”x 48”x 5/8”; Color: White.
2. Ceiling Grid: Donn DX Double Webb intermediate duty grid; Color: Flat White. Class “A” suspension system shall be installed per recommendation.

B. Gypsum Board

1. 5/8” type gypsum board, taped with medium knock down finish.
2. 6”x 20 gauge steel joists at 24” o.c.
3. R-l1 fiberglass batt insulation laid above ceiling unless otherwise noted. (In restroom area only).

IV. FLOOR COVERING

A. Carpet Upgrade

1. Designweave "Council", 40 oz. Precision Cut and Loop, color selected by tenant.
2. Installation: Over Pad.
3. Carpet Pad: Hartex contract heavy traffic M.R. 1049.

B. Vinyl Flooring

1. Armstrong Classic Corlon commercial sheet flooring. Quality: Seagate.
2. Self-coved base.
3. Color as shown on finish schedule.

V. WALL TREATMENTS

A. Wallcovering - location and type as shown on drawings.

B. Paint - More than one (1) color or color other than building standard.

**** Note:** The Owner has the right to substitute product if unavailable to a equal or greater quality.

EXHIBIT B

WORK LETTER AGREEMENT

You (hereinafter called “Tenant”) and we (hereinafter called “Landlord”) are executing simultaneously with this Work Letter Agreement (the “Work Letter Agreement”), a written Office Lease (the “Lease”) covering those certain Premises more particularly described in the Lease, in the building addressed at 202 Cousteau Place, Davis, California.

For and in consideration of the agreement to lease the Premises and the mutual covenants contained herein and in the Lease, Landlord and Tenant hereby agree as follows:

1. **Lease Provisions**. Unless otherwise defined in this Work Letter Agreement, the capitalized terms used herein shall have the meaning assigned to them in the Lease. The terms and provisions of the Lease, insofar as they are applicable to this Work Letter Agreement are hereby incorporated herein by reference.

2. **Representatives**. Landlord hereby appoints Kevin F. Ramos as Landlord's representatives to act for Landlord in all matters covered by this Work Letter Agreement. Tenant hereby appoints Steve Harrison as Tenant's representatives to act for Tenant in all matters covered by this Work Letter Agreement. Notices under this Work Letter Agreement shall be given to the parties' representatives in the same manner as under the Lease. All inquiries, requests, instructions, authorizations and other communications with respect to the matters covered by this Work Letter Agreement shall be related to Landlord's representatives or Tenant's representatives, as the case may be. Tenant will not make any inquiries of or request to, and will not give any instructions or authorizations to, any other employee or agent of Landlord, including Landlord's architects, engineers, and contractors or any of their agents or employees, with regard to matters covered by this Work Letter Agreement. Either Landlord or Tenant may change its representatives at any time by written notice to the other.

3. **Work**. Tenant, at its sole cost and expense, shall perform, or cause to be performed, the work (the "Work") in the Premises provided for in the Approved Plans (as defined in Section 4 hereof). Subject to Tenant's satisfaction of the conditions specified in this Work Letter Agreement, Tenant shall be entitled to Landlord's Contribution (as defined in Section 9(b) below.

4. **Pre-Construction Activities**.

(a) Prior to Tenant's commencement of the Work, Tenant shall submit the following information and items to Landlord for Landlord's review and approval:

(i) The names and addresses of Tenant's contractors (and said contractor's subcontractors) and materialmen to be engaged by Tenant for the Work (individually, a "Tenant Contractor," and collectively, "Tenant's Contractors"). Landlord has the right to reasonably approve or disapprove all or any one or more of Tenant's Contractors. Landlord may, at its election, designate a list of approved contractors for performance of those portions of work involving electrical, mechanical, plumbing, heating, air conditioning or life safety systems, from which Tenant must select its contractors for such designated portions of work.

(ii) Certificates of insurance as hereinafter described. Tenant shall not permit Tenant's Contractors to commence work until the required insurance has been obtained and certified copies of policies or certificates have been delivered to Landlord.

(iii) The Plans (as hereinafter defined) for the Work, which Plans shall be subject to Landlord's approval in accordance with Section 4(b) below.

Tenant will update such information and items by notice to Landlord of any changes.

(b) As used herein the term "Approved Plans" shall mean the Plans (as hereinafter defined), as and when approved in writing by Landlord. As used herein, the term "Plans" shall mean the full and detailed architectural and engineering plans and specifications covering the Work (including, without limitation, architectural, mechanical and electrical working drawings for the Work). The Plans shall be subject to Landlord's approval and the approval of all local governmental authorities requiring approval of the work and/or the Approved Plan. Landlord shall give its approval or disapproval (giving general reasons in case of disapproval) of the Plans within ten (10) business days after their delivery to Landlord. Landlord agrees not to unreasonably withhold its approval of said Plans; provided, however, that Landlord shall not be deemed to have acted unreasonably if it withholds its approval of the Plans because, in Landlord's reasonable opinion: the Work as shown in the Plans is likely to adversely affect Building systems, the structure of the Building or the safety of the Building and/or its occupants; the Work as shown on the Plans might impair Landlord's ability to furnish services to Tenant or other tenants; the Work would increase the cost of operating the Building; the Work would violate any governmental laws, rules or ordinances (or interpretations thereof); the Work contains or uses hazardous or toxic materials or substances which are not customarily used in the building trade; the Work would adversely affect the appearance of the Building; the Work might materially adversely affect another tenant's premises; or the Work is prohibited by any mortgage or trust deed encumbering the Building. The foregoing reasons, however, shall not be exclusive of the reasons for which Landlord may withhold consent, whether or not such other reasons are similar or dissimilar to the foregoing. If Landlord notifies Tenant that changes are required to the final Plans submitted by Tenant, Tenant shall submit to Landlord, for its approval, the Plans amended in accordance with the changes so required. The Plans shall also be revised, and the Work shall be changed, all at Tenant's cost and expense, to incorporate any work required in the Premises by any local governmental field inspector. Landlord's approval of the Plans shall in no way be deemed to be (i) an acceptance or approval of any element therein contained which is in violation of any applicable laws, ordinances, regulations or other governmental requirements, or (ii) an assurance that work done pursuant to the Approved Plans will comply with all applicable laws (or with the interpretations thereof) or satisfy Tenant's objectives and needs.

(c) No Work shall be undertaken or commenced by Tenant in the Premises until (i) Tenant has delivered, and Landlord has approved, all items set forth in Section 4(a) above, (ii) all necessary building permits have been applied for and obtained by Tenant.

5. **Delays.** In the event Tenant fails to deliver or deliver in sufficient and accurate detail the information required under Section 4 above, or in the event Tenant, for any reason, fails to complete the Work on or before the Commencement Date, Tenant shall be responsible for Rent and all other obligations set forth in the Lease from the Commencement Date regardless of the degree of completion of the Work on such date, and no such delay in completion of the Work shall relieve Tenant of any of its obligations under the Lease.

6. **Change Orders**. All changes to the Approved Plans requested by Tenant must be approved by Landlord in advance of the implementation of such changes as part of the Work, which approval shall not be unreasonably conditioned or withheld and shall be delivered as soon as reasonably possible, but in no event later than five (5) business days after Tenant's request therefor. All delays caused by Tenant-initiated change orders, including, without limitation, any stoppage of work during the change order review process, are solely the responsibility of Tenant and shall cause no delay in the commencement of the Lease or the Rent and other obligations therein set forth. All increases in the cost of the Work resulting from such change orders shall be borne by Tenant.

7. **Standards Of Design And Construction And Conditions Of Tenant's Performance**. All work done in or upon the Premises by Tenant shall be done according to the standards set forth in this Section 7, except as the same may be modified in the Approved Plans approved by or on behalf of Landlord and Tenant.

(a) Tenant's Approved Plans and all design and construction of the Work shall comply with all applicable statutes, ordinances, regulations, laws, codes and industry standards, including, but not limited to, requirements of Landlord's fire insurance underwriters.

(b) Tenant shall, at its own cost and expense, obtain all required building permits and occupancy permits. Tenant's failure to obtain such permits shall not cause a delay in the commencement of the Lease Term or the obligation to pay Rent or any other obligations set forth in the Lease.

(c) Tenant's Contractors shall be licensed contractors, possessing good labor relations, capable of performing quality workmanship and working in harmony with Landlord's contractors and subcontractors and with other contractors and subcontractors in the Building. All work shall be coordinated with any other construction or other work in the Building in order not to adversely affect construction work being performed by or for Landlord or its tenants.

(d) Tenant shall use only new, first-class materials in the Work, except where explicitly shown in the Approved Plans, All Work shall be done in a good and workmanlike manner. Tenant shall obtain contractors' warranties of at least one (1) year duration from the completion of the Work against defects in workmanship and materials on all work performed and equipment installed in the Premises as part of the Work.

(e) Tenant and Tenant's Contractors shall make all reasonable efforts and take all steps appropriate to assure that all construction activities undertaken comport with the reasonable expectations of all tenants and other occupants of a fully-occupied (or substantially fully occupied) first-class office building and do not unreasonably interfere with the operation of the Building or with other tenants and occupants of the Building. In any event, Tenant shall comply with all reasonable rules and regulations existing from time to time at the Building. Tenant and Tenant's Contractors shall take all precautionary steps to minimize dust, noise and construction traffic, and to protect their facilities and the facilities of others affected by the Work and to properly police same. Construction equipment and materials are to be kept within the Premises and delivery and loading of equipment and materials shall be done at such locations and at such time as Landlord shall direct so as not to burden the construction or operation of the Building. If and as required by Landlord, the Premises shall be sealed off from the balance of the office space on the floor(s) containing the Premises so as to minimize the dispersement of dirt, debris and noise.

(f) Landlord shall have the right to order Tenant or any of Tenant's Contractors who violate the requirements imposed on Tenant or Tenant's Contractors in performing work to cease work and remove its equipment and employees from the Building. No such action by Landlord shall delay the commencement of the Lease or the obligation to pay Rent or any other obligations therein set forth.

(g) Utility costs or charges for any service (including HVAC, hoisting or freight elevator and the like) to the Premises shall be the responsibility of Tenant from and after the Commencement Date. Tenant shall pay for all support services provided by Landlord's contractors at Tenant's written request or at Landlord's discretion resulting from breaches or defaults by Tenant under this Work Letter Agreement. All use of freight elevators is subject to scheduling by Landlord and the rules and regulations of the Building. Tenant shall arrange and pay for removal of construction debris and shall not place debris in the Building's waste containers. If required by Applicable Law, Tenant shall sort and separate its waste and debris for recycling and/or environmental law compliance purposes.

(h) Tenant shall permit access to the Premises, and the Work shall be subject to inspection, by Landlord and Landlord's architects, engineers, contractors and other representatives, at all times during the period in which the Work is being constructed and installed and following completion of the Work.

(i) Tenant shall proceed with its work expeditiously, continuously and efficiently.

(j) Tenant shall have no authority to deviate from the Approved Plans in performance of the Work, except as authorized by Landlord and its designated representative in writing (which shall not be unreasonably conditioned, withheld or delayed). Tenant shall furnish to Landlord "as-built" drawings of the Work within thirty (30) days after completion of the Work.

(k) Landlord shall have the right to run utility lines, pipes, conduits, duct work and component parts of all mechanical and electrical systems where necessary or desirable through the Premises, to

repair, alter, replace or remove the same, and to require Tenant to install and maintain proper access panels thereto, provided such work shall be performed at such times in such manner so as to minimize disruption to the conduct of Tenant's business in the Premises and the construction of Tenant's Work.

(l) Tenant shall impose on and enforce all applicable terms of this Work Letter Agreement against Tenant's architect and Tenant's Contractors.

8. **Insurance And Indemnification**.

(a) In addition to any insurance which may be required under the Lease, Tenant shall secure, pay for and maintain or cause Tenant's Contractors to secure, pay for and maintain during the continuance of the Work within the Building or Premises, insurance in the following minimum coverages and the following minimum limits of liability:

(i) Worker's Compensation and Employer's Liability Insurance with limits of not less than $500,000.00, or such higher amounts as may be required from time to time by any Employee Benefit Acts or other statutes applicable where the work is to be performed, and in any event sufficient to protect Tenant's Contractors from liability under the aforementioned acts.

(ii) Comprehensive General Liability Insurance (including Contractors' Protective Liability) in an amount not less than $1,000,000.00 per occurrence, whether involving bodily injury liability (or death resulting therefrom) or property damage liability or a combination thereof with a minimum aggregate limit of $2,000,000.00, and with umbrella coverage with limits not less than $5,000,000.00. Such insurance shall provide for explosion and collapse, completed operations coverage and broad form blanket contractual liability coverage and shall insure Tenant's Contractors against any and all claims for bodily injury, including death resulting therefrom, and damage to the property of others and arising from its operations under the contracts whether such operations are performed by Tenant's Contractors or by anyone directly or indirectly employed by any of them.

(iii) Comprehensive Automobile Liability Insurance, including the ownership, maintenance and operation of any automotive equipment, owned, hired, or non-owned in an amount not less than $500,000.00 for each person in one accident, and $1,000,000.00 for injuries sustained by two or more persons in any one accident and property damage liability in an amount not less than $1,000,000.00 for each accident. Such insurance shall insure Tenant's Contractors against any and all claims for bodily injury, including death resulting therefrom, and damage to the property of others arising from its operations under the contracts, whether such operations are performed by Tenant's Contractors, or by anyone directly or indirectly employed by any of them.

(iv) "All-risk" builder's risk insurance upon the entire Work to the full insurable value thereof. This insurance shall include the interests of Landlord and Tenant (and their respective contractors and subcontractors of any tier to the extent of any insurable interest therein) in the Work and shall insure against the perils of fire and extended coverage and shall include "all-risk" builder's risk insurance for physical loss or damage including, without duplication of coverage, theft vandalism and malicious mischief. If portions of the Work are stored off the site of the Building or in transit to said site are not covered under said "all-risk" builder's risk insurance, then Tenant shall effect and maintain similar property insurance on such portions of the Work. Any loss insured under said "all-risk" builder's risk insurance is to be adjusted with Landlord and Tenant.

(v) All policies (except the worker's compensation policy) shall be endorsed to include as additional insured parties the parties listed on, or required by, the Lease, Landlord's contractors, Landlord's architects, and their respective beneficiaries, partners, directors, officers, employees and agents, and such additional persons as Landlord may designate. The waiver of subrogation provisions contained in the Lease shall apply to all insurance policies (except the worker's compensation policy) to be obtained by Tenant pursuant to this Section. The insurance policy endorsements shall also provide that all additional insured parties shall be given thirty (30) days' prior written notice of any reduction, cancellation or non-renewal of coverage (except that ten (10) days' notice shall be sufficient in the case of cancellation for non-payment of premium) and shall provide that the insurance coverage afforded to the additional insured parties thereunder shall be primary to any insurance carried

independently by said additional insured parties. Additionally, where applicable, each policy shall contain a cross-liability and severability of interest clause.

(b) Without limitation of the indemnification provisions contained in the Lease, to the fullest extent permitted by law Tenant agrees to indemnify, protect, defend and hold harmless Landlord, the parties listed, or required by, the Lease to be named as additional insureds, Landlord's contractors, Landlord's architects, and their respective beneficiaries, partners, directors, officers, employees and agents ("Landlord's Parties"), from and against all claims, liabilities, losses, damages and expenses of whatever nature to the extent arising out of or in connection with the Work or the entry of Tenant or Tenant's Contractors into the Building and the Premises, including, without limitation, mechanic's liens, the cost of any repairs to the Premises or Building necessitated by activities of Tenant or Tenant's Contractors, bodily injury to persons (including, to the maximum extent provided by law, claims arising under the California Structural Work Act) or damage to the property of Tenant, its employees, agents, invitees, licenses or others. It is understood and agreed that the foregoing indemnity shall be in addition to the insurance requirements set forth above and shall not be in discharge of or in substitution for same or any other indemnity or insurance provision of the Lease. The foregoing indemnity shall not apply to the extent such matter arises out of or results from the negligence or willful misconduct of Landlord or Landlord's Parties or a breach of the Lease by Landlord.

9. **Landlord's Contribution.**

(a) Contribution Amount. Landlord shall make a dollar contribution ("Landlord's Contribution") in the amount of Two hundred five thousand two hundred Dollars ($205,200.00) (which is Twenty-seven Dollars ($27.00) per square foot of Rentable Area of the Premises) for application to the extent thereof to the cost of the Work. If the cost of the Work exceeds Landlord's Contribution, Tenant shall have sole responsibility for the payment of such excess cost except that Landlord shall be responsible for any such excess costs to the extent caused by negligence or willful misconduct of the Landlord Parties or breach of this Lease by Landlord. If the cost of the Work is less than Landlord's Contribution, Tenant shall not be entitled to any payment or credit for such excess amount. Notwithstanding anything herein to the contrary, Landlord may deduct from Landlord's Contribution any amounts due Landlord or its architects or engineers under this Work Letter Agreement before disbursing any other portion of Landlord's Contribution.

(b) Payment of Contribution. Landlord shall make periodic disbursements of Landlord's Contribution for the benefit of Tenant, not more often than once per month. Landlord shall authorize and make payment or release of monies for the benefit of Tenant to Tenant and/or the party designated by Tenant within five (5) days after receipt of a request for payment approved by Tenant and any supporting information reasonably required in good faith by Landlord.

Tenant must, in order to receive a disbursement of the Landlord's Contribution, meet all of the following criteria:

(i) Tenant or Tenant's contractors shall submit for Landlord's approval copies of plans and specifications for Tenant's proposed improvements;

(ii) Prior to commencement of actual construction, Tenant must submit to Landlord a copy of the approved building permit(s) from the appropriate governmental authority; and

(iii) Prior to receiving progress payments for the tenant improvements (subject to a 10% retention), Tenant shall submit to Landlord a statement of Tenant's contractor or architect that the work is complete to the extent that payment is requested.

Upon completion of the Work, and in order to receive the final amounts owed (including the ten percent (10%) retention amount from Landlord, Tenant shall provide Landlord with the following:

(i) Written proof (a fully signed "Certificate of Occupancy", "Certificate of Completion" or other document authorizing Tenant's occupancy of the Premises from the appropriate governmental authority) that the improvements were substantially completed to the satisfaction of the local building department;

(ii) Complete original As-Built plans and specifications;

(iii) A detailed breakdown of the total costs of the Work;

(iv) Tenant's written acknowledgment that the Work is substantially complete and Tenant is reasonably satisfied with the completion of the Work, except for any punchlist items;

(v) Full and final waivers of liens and contractors' affidavits and statements, in such form as may be reasonably required by Landlord, Landlord's title insurance company and Landlord's construction or permanent lender, if any, from all parties performing labor or supplying materials or

services in connection with the Work showing that all of said parties have been compensated in full and waiving all liens in connection with the Premises and Building.

(vi) The parties will mutually cooperate to enforce any contractor warranties issued in connection with the tenant improvement work.

If Landlord fails to fulfill its obligation to disburse Landlord's Contribution following five (5) business days' notice from Tenant and Landlord's failure to cure within such period, Tenant shall have the following rights, which rights shall be cumulative and in addition to any rights or remedies available to Tenant under the Lease, at law or in equity; (i) to cease performance of all or any portion of the Work, or (ii) continue to perform the Work, and offset any outstanding sums plus interest at ten percent (10%) per annum against Tenant's obligation to pay Rent next coming due under this Lease.

10. **Intentionally Omitted.**

11. **On-Site Project Manager**. As a condition of Tenant's right to commence and perform the Work, Tenant shall engage the services of an on-site project manager approved in advance by and reasonably acceptable to Landlord, who will be charged with the task of performing daily supervision of the Work. Such on-site manager shall be familiar with all rules and regulations and procedures of the Building and all personnel of the Building engaged directly or indirectly in the management, operation and construction of the Building. Such on-site project manager shall be accountable and responsible to Tenant and to Landlord and, where necessary, shall serve as a liaison between Landlord and Tenant with respect to the Work. The entire cost and expense of the on-site project manager shall be borne and paid for by Tenant (subject to Tenant's right to use all or any part of Landlord's Contribution to reimburse Tenant for the same.)

12. **Construction Dispute Resolution**.

(a) If any dispute arises between Landlord and Tenant, solely with respect to any matter relating to the Work or the initial construction or buildout of the Building or the Premises, the parties shall attempt in good faith to settle the dispute by mediation under the Construction Industry Mediation Rules of the American Arbitration Association. If such dispute is not resolved by mediation within thirty (30) days of the first written request for mediation, then such dispute shall be resolved by arbitration. Landlord and Tenant each hereby waive its right to seek a judicial determination of whether either party is in breach of, or default under, any of the terms or provisions of this Work Letter Agreement, or under the Lease, to the extent that the alleged breach or default under the Lease relates to the initial construction or buildout of the Building or the Premises. The venue for any mediation or arbitration proceedings under this Work Letter Agreement shall be in Sacramento County, California. The requirement that all disputes be resolved through mediation and then arbitration pursuant to this Section shall constitute an absolute defense to any court action filed by one of the parties hereto against the other, and shall enable the party against whom such action is filed to cause such action to be dismissed or set aside at any time.

(b) If a right to arbitration arises pursuant to Section 12(a), either party may serve upon the other party and file with the American Arbitration Association San Francisco Office a written notice demanding that such dispute be resolved by arbitration pursuant to this Section 12(b). Within five (5) days following such request for arbitration, the parties shall exchange a list of acceptable arbitrators and select one from those lists. If they are unable to agree on an arbitrator, an arbitrator shall be appointed within the shortest possible period by the assigned Case Administrator in the American Arbitration Association San Francisco Office or any successor association or body of comparable standing if the American Arbitration Association is not then in existence. Any controversy or claim arising out of or relating to this Work Letter Agreement or the breach of this Work Letter Agreement shall be settled by one arbitrator in accordance with the commercial rules of the American Arbitration Association. Judgment on the award rendered by the arbitrator may be entered in any court having jurisdiction over the dispute. The arbitrator shall assess its fee, all other fees and costs of any such arbitration proceeding and reasonable attorneys' fees, against the party to whom, in the arbitrator's opinion, is not the prevailing party.

(c) Notwithstanding anything to the contrary contained in this Work Letter Agreement, the parties shall each have the right to file with a court of competent jurisdiction an application for temporary or preliminary injunctive relief, writ of attachment, writ of possession, temporary protective order, or appointment of a receiver if the arbitration award to which the applicant may be entitled may be rendered ineffectual in the absence of such relief or if there is no other adequate remedy. Such application shall not waive a party's arbitration rights under this Work Letter Agreement.

(d) Notwithstanding anything to the contrary contained in this Work Letter Agreement, if Landlord fails to pay Tenant any amount due under the terms of this Work Letter Agreement, Tenant may record a mechanic's lien against the Property and may commence an action to foreclose such mechanic's lien in accordance with State of California law; however, if arbitration has been commenced and an award issued prior to the date Tenant commences an action to foreclose any mechanic's lien recorded against the Property, Tenant agrees to be bound by such arbitration award and shall waive any right to foreclose its mechanic's lien for an amount in excess of the arbitration award.

(e) During any mediation or arbitration proceedings, Landlord and Tenant shall continue to carry out their responsibilities under this Work Letter Agreement. The parties' respective obligations contained in this Section 12(e) shall be specifically enforceable under applicable law in any court having jurisdiction thereof.

13. **Additional Provisions.**

(a) Time is of the essence of this Work Letter Agreement.

(b) If the Plans for the Work require the construction and installation of more fire hose cabinets or telephone/electrical closets than the number regularly provided by Landlord in the core of the Building in which the Premises are located, Tenant agrees to pay all costs and expenses arising from the construction and installation of such additional fire hose cabinets or telephone/electrical closets.

(c) Tenant agrees that unless otherwise expressly provided in the Lease, neither this Agreement nor the Lease grants Tenant any right of access to the roof of the Building. Should Landlord, in connection with this Agreement or the Lease, agree to mount equipment of any nature on the Building roof, such equipment shall, at Landlord's option, either be maintained and installed by Landlord, or maintained and installed under Landlord's direction, unless this Agreement expressly provides otherwise, all at Tenant's expense. Should this Agreement or the Lease permit Tenant to install any equipment on the roof, any modifications to the roof or the roofs structure to accommodate that equipment shall be made at Tenant's sole cost and expense.

(d) Tenant agrees that should the nature of its layout or any of its equipment, fixtures or furnishings to be placed in the Premises place a burden in excess of the Building's designed load, which is 100 pounds per square foot, Tenant agrees to pay Landlord the cost of any modifications to the Building

necessary to accommodate Tenant's furniture, furnishings or layout, as well as any design, engineering or other professional fees incurred by Landlord in connection with such modifications.

(e) Any person signing this Work Letter Agreement on behalf of Landlord and Tenant warrants and represents he has authority to sign and deliver this Work Letter Agreement and bind the party on behalf of which he has signed.

(f) If Tenant fails to make any payment relating to the Work as required hereunder within fifteen (15) days after written notice from Landlord specifying that such amount is due and payable, Landlord, at its option, may complete the Work pursuant to the Approved Plans and continue to hold Tenant liable for the costs thereof and all other costs due to Landlord. All amounts due from Tenant hereunder shall be deemed to be Rent due under the Lease. Tenant's failure to pay any amounts owed by Tenant hereunder when due or Tenant's failure to perform its obligations hereunder shall also constitute a default under the Lease (subject to the notice and cure provisions referenced in Section 27 of the Lease) and Landlord shall have all the rights and remedies granted to Landlord under the Lease for nonpayment of any amounts owed thereunder or failure by Tenant to perform its obligations thereunder.

(g) This Work Letter Agreement sets forth the entire agreement of Tenant and Landlord regarding the Work. This Work Letter Agreement may only be amended if in writing, duly executed by both Landlord and Tenant.

14. **Alterations**. Any alterations or improvements desired by Tenant after the completion of the Work shall be subject to the provisions of Section 12 (entitled "Alterations and Additions") of the Lease.

If the foregoing correctly sets forth our understanding, please sign this Agreement where indicated below.

Landlord:
Marvin L. Oates, Trustee of the Marvin L. Oates Trust, dated March 7, 1995, as Amended and Restated December 20, 2001 and Frank C. Ramos and Joanne M. Ramos as husband and wife

Tenant:
Arcadia Biosciences, Inc., an Arizona Corporation

By: /s/ Roy Hodges
Roy Hodges, President

Date: 3.17.03

Marvin L. Oates, Trustee of the Marvin L. Oates Trust, dated March 7, 1995, as Amended and Restated December 20, 2001

By: /s/
Frank C. Ramos, husband

By: /s/
Joanne M. Ramos, wife

Date: _____

Approved as to form:

/s/ — 3-17-03
Office of the General Counsel — Date

Approved as to financial terms:

/s/ — 3-17-03
Finance — Date

No Changes may be made after signatures above

/s/

EXHIBIT C

Rules and Regulations

1. No sign, placard, advertisement, name or notice shall be installed or displayed on any part of the outside or inside of the building without the prior written consent of Landlord. Landlord shall have the right to remove, at Tenant's expense and without notice, any sign installed or displayed in violation of this rule. All approved signs or lettering on doors and walls shall be printed, painted, affixed, or inscribed at the expense of Tenant by a licensed and insured sign company approved by Landlord.

2. If Landlord objects in writing to any curtains, blinds, shades, screens or hanging plants or other similar objects attached to or used in connection with any window or door of the Premises, Tenant shall immediately discontinue such use. No awning shall be permitted on any part of the Premises. Tenant shall not place anything against or near glass partitions or doors or windows that may appear unsightly from outside of the Premises.

3. Tenant shall not obstruct any sidewalks, halls, passages, exits, entrances, elevators or stairways of the Building. The halls, passages, exits, entrances, elevators and stairways are not for the general public, and Landlord shall in all cases retain the right to control and prevent access thereto of all persons whose presence in the judgment of Landlord would be prejudicial to the safety, character, reputation and interests of the Building and its tenants; provided that nothing herein contained shall be construed to prevent such access to persons with whom any tenant normally deals in the ordinary course of its business, unless such persons are engaged in illegal activities. No tenant and no employee or invitee of any tenant shall go upon the roof of the Building.

4. Landlord will provide a central directory for the Building. Each tenant's name and suite number shall be printed on an equally sized strip in the directory. The directory of the Building will be provided exclusively for the display of the name and location of tenants only, and Landlord reserves the right to exclude any other names therefrom.

5. All cleaning and janitorial services for the Building and the Premises shall be provided exclusively through Landlord, except with the written consent of Landlord, no person or persons other than those approved by Landlord shall be employed by Tenant or permitted to enter the Building for the purpose of cleaning the same. Tenant shall not cause any unnecessary labor by carelessness or indifference to the good order and cleanliness of the Premises. Landlord shall not in any way be responsible to any Tenant for any loss of property on the Premises, however occurring or for any damage to any tenant's property by the janitor or any other employee or any other person.

6. Landlord will furnish Tenant, free of charge, with two keys to each door lock in the Premises. Landlord may make a reasonable charge for any additional keys. Tenant shall not make or have made additional keys, and Tenant shall not alter any lock or install a new additional lock or bolt on any door of its Premises. Tenant, upon the termination of its tenancy, shall deliver to Landlord the keys of all doors which have been furnished to Tenant, and in the event of loss of any keys so furnished, shall pay Landlord therefor.

7. Landlord will furnish Tenant, free of charge, with four card reader access cards per thousand usable feet leased. Additional or replacement cards may be purchased from the Landlord for $10.00 per card. Tenant shall provide Landlord with the name of each employee issued an access card prior to delivery of the card. Tenant shall notify Landlord immediately of any lost or stolen access card so that the access privileges to that card may be deleted from the system. Tenant shall return to Landlord all access cards upon the earlier of the termination of the Lease or vacating the Premises.

8. If Tenant requires telegraphic, telephonic, burglar alarm, antenna, satellite dish or similar services, it shall first obtain, and comply with, Landlord's instructions in their installation. Tenant shall supply Landlord with specifications and drawings of the item to be installed and the manner in which it will be installed and any other documentation Landlord may require. Landlord reserves the right to prohibit the installation of any such item at Landlord's sole discretion.

9. Tenant shall not place a load upon any floor of the Premises which exceeds the load per square foot which such floor was designed to carry and which is allowed by law. Landlord shall have the right to prescribe the weight, size and position of all equipment, materials, furniture and other property brought into the Building. Heavy objects

shall, if considered necessary by Landlord, stand on such platforms as determined by Landlord to be necessary to properly distribute the weight. Business machines and mechanical equipment belonging to Tenant, which cause noise or vibration that may be transmitted to the structure of the Building or to any space therein to such a degree as to be objectionable to Landlord or to any tenants in the Building, shall be placed and maintained by Tenant, at Tenant's expense, on vibration eliminators or other devices sufficient to eliminate noise or vibration. The persons employed to move such equipment in or out of the Building must be acceptable to Landlord. Landlord will not be responsible for loss of, or damage to, any such equipment or other property from any cause, and all damage done to the Building by maintaining or moving such equipment or other property shall be repaired at the expense of Tenant.

10. Tenant shall not use or keep in the Premises any kerosene, gasoline or inflammable or combustible fluid or materials other than those limited quantities necessary for the operations or maintenance of office equipment. Tenant shall not use or permit to be used in the Premises any foul or noxious gas or substance, or permit or allow the Premises to be occupied or used in a manner offensive or objectionable to Landlord or other occupants of the Building by reason of noise, odors, vibrations, nor shall Tenant bring into or keep on or about the Premises any birds or animals.

11. Tenant shall not use any method of heating or air-conditioning other than supplied by Landlord. Heating and air conditioning shall be supplied by Landlord between 7:00 AM and 6:00 PM Monday through Friday and 8:00 AM through 1:00 PM on Saturday, holidays excluded. Tenant may override the HVAC system for additional heating and cooling outside of the established hours. This usage is electronically monitored and will be billed to the tenant at a reasonable cost.

12. Tenant shall not waste electricity, water or air-conditioning and agrees to cooperate fully with Landlord to assure the most effective operation of the Building's heating and air-conditioning and to comply with any governmental energy-saving rules, laws or regulations of which Tenant has actual notice, and shall refrain from attempting to adjust controls other than room thermostats installed for Tenant's use. Tenant shall keep corridor and exterior doors closed and shall close window coverings at the end of each business day.

13. Landlord reserves the right, exercisable without notices and without liability to Tenant, to change the name and street address of the Building.

14. Landlord reserves the right to exclude from the Building between the hours of 6:00 pm and 7:00 am the following day, or such other hours as may be established from time to time by Landlord, and on Sundays and legal holidays, any person unless that person is known to the person or employee in charge of the Building and has a pass or is properly identified. Tenant shall be responsible for all persons for whom it requests passes and shall be liable to Landlord for all acts of such persons. Landlord shall not be liable for damages for any error with regard to the admission to or exclusion from the Building of any person. Landlord reserves the right to prevent access, to the Building in case of invasion, mob, riot, public excitement or other commotion by closing the floors or by other appropriate action.

15. Tenant shall close and lock the doors of the Premises and entirely shut off all water facets or other water apparatus, the electricity, gas or air outlets before Tenant and its employees leave the Premises. Tenant shall be responsible for any damage or injuries sustained by other tenants or occupants of the Building or by Landlord for non-compliance with this rule.

16. The toilet rooms, toilets, urinals, wash bowls and other apparatus shall not be used for any purpose other than that for which they were constructed and no foreign substance of any kind whatsoever shall be thrown therein. The expense of any breakage, stoppage or damage resulting from the violation of this rule shall be borne by the tenant who, or whose employees or invitees shall have caused it.

17. Tenant shall not sell, or permit the sale at retail, of newspaper, magazines, periodicals, theater tickets or any other goods or merchandise to the general public in or on the Premises. No door-to-door soliciting, including soliciting by tenants, is permitted within the Building. Tenant shall not use the Premises for any business or activity other than that specifically provided for in Tenant's lease.

18. Tenant shall not install any radio or television antenna, loudspeaker or other devise on the roof or exterior walls of the Building. Tenant shall not interfere with radio or television broadcasting or reception from or in the Building or elsewhere.

19. Landlord reserves the right to direct electricians as to where and how telephone and telegraph wires are to be introduced to the Premises. Tenant shall not cut or bore holes for wires. Tenant shall not affix any floor covering to the floor of the Premises in any manner except as approved by Landlord. Tenant shall repair any damage resulting from noncompliance with this rule.

20. Tenant shall not install, maintain or operate upon the Premises any vending machine without written consent of Landlord.

21. Canvassing, soliciting and distribution of handbills or any other materials, and peddling in the Building, Project, and Parking Lots are prohibited and each tenant shall cooperate to prevent it.

22. Landlord reserves the right to exclude or expel from the Building any person who, in the Landlord's judgment, is intoxicated or under the influence of liquor or drugs or who is in violation of any of the Rules and Regulations of the Building.

23. Tenant shall store all its trash and garbage within the Premises. Tenant shall not place in any trash box or receptacle any material that cannot be disposed of in the ordinary and customary manner of trash and garbage disposal. All garbage and refuse disposal shall be made in accordance with directions issued from time to time by Landlord.

24. The Premises shall not be used for storage of merchandise held for sale to the general public, or for lodging or for manufacturing of any kind, nor shall the Premises be used for any improper, immoral or objectionable purpose. No cooking shall be done or permitted by any tenant on the Premises, except that use by Tenant of Underwriter's Laboratory approved microwave ovens and equipment or brewing coffee, tea, hot chocolate and similar beverages shall be permitted, provided that such equipment and use in accordance will all applicable federal, state, county and city laws, codes, ordinances, rules and regulations.

25. Tenant shall not use in any space or in the public halls of the Building any hand trucks except those equipped with rubber tires and side guards or such other materials handling equipment as Landlord any approve. Tenant shall not bring any other vehicles of any kind into the Building.

26. Without the written consent of Landlord, Tenant shall not use the name of the Building in connection with or in promoting or advertising the business of Tenant except as Tenant's address.

27. Tenant shall comply with all safety, fire protection and evacuation procedures and regulations established by Landlord or any governmental agency.

28. Tenant assumes any and all responsibility for protecting its Premises from theft, robbery and pilferage, which includes keeping doors locked and other means of entry to the Premises closed.

29. The requirements of tenant will be attended to only upon appropriate application to the owner's designated representative by an authorized individual. Employees of Landlord shall not perform any work or do anything outside of their regular duties unless under special instructions from Landlord, and no employee of Landlord will admit any person (Tenant or otherwise) to any office without specific instructions from Landlord.

30. Tenant shall not park its vehicles in any parking areas designated by Landlord as areas for parking by visitors to the Building. Tenant shall not park its vehicles in any parking space marked for short term parking for longer than the designated time restriction. Tenant shall abide by any parking program which the Landlord may from time to time institute. Except while using the Premises, Tenant shall not leave vehicles in the Building parking areas overnight nor park any vehicles in the Building parking areas other than automobiles, motorcycles, motor driven or

no-motor driven bicycles or four-wheeled trucks.

31. Landlord may waive any one or more of these Rules and Regulations for the benefit of Tenant or any other Tenant, but no such waiver by Landlord shall be construed as a waiver of such Rules & Regulations in favor of Tenant or any other tenant, nor prevent Landlord from thereafter enforcing any such Rules and Regulations against any or all of the tenants of the Building.

32. These Rules and Regulations are in addition to, and shall not be construed to or in any way modify or amend, in whole or in part, the terms, covenants, agreements and conditions of any lease of premises in the Building.

33. Landlord reserves the right to make such other and reasonable Rules and Regulations as, in its judgment, may from time to time be needed for safety and security, for care and cleanliness of the Building and for the preservation of good order therein. Tenant agrees to abide by all such Rules and Regulations herein stated and any additional rules and regulations which are adopted.

34. Tenant shall be responsible for the observances of all of the foregoing rules by Tenant's employees, agents, clients, customers, invitees and guests.

EXHIBIT D

Janitorial Specifications
Contract Specifications

Daily:

1. Empty and clean all trash containers and dispose of all trash and rubbish.
2. Clean and maintain in a sanitary and odor-free condition all floors, wash mirrors, basins, toilet bowls, and urinals.
3. Furnish and replenish all toilet room supplies (including soap, towels, seat covers, toilet tissue, and sanitary napkins).
4. Change light bulbs and tubes as necessary (owner to furnish and replenish).
5. Sweep or dust-mop all hard surface floors, and carpet sweep all carpeted areas, including stairways and halls. (Offices with hard surface floors in a public lobby area shall be damp-mopped daily).
6. Remove finger marks and smudges from all glass doors.

7. Specifically check, and if needed, then:
   - Dust the tops of all furniture, counters, cabinets, and windowsills, (which are free of interfering objects).
   - Remove spots and / or spills from the carpets, floors, and stairways.
   - Change all inoperative light bulbs.

Twice Weekly: Vacuum all carpets.

Weekly:

1. Damp-mop all hard surface floors.
2. Dust all window blinds.
3. Treat stainless steel fountains and sinks to eliminate stains and mineral deposits.
4. Spot clean the walls.

BUZZ OATES
REAL ESTATE

September 13, 2004

Mr. Eric J. Rey
President
Arcadia Biosciences
202 Cousteau Place
Suite 200
Davis, CA 95616

RE: Executed Lease Amendment

Dear Eric:

Enclosed, please find a fully executed Lease Amendment #1 for the additional space adjacent to your existing leased space.

If you have any questions, please feel free to call me.

Sincerely,

/s/ Dave Edwards
Dave Edwards
Vice President
Buzz Oates Real Estate

DE:mjf

Enclosures

DEVELOPMENT · CONSTRUCTION · REAL ESTATE · PROPERTY MANAGEMENT
Established 1951 8615 Elder Creek Road · Sacramento, CA 95828 · 916.381.0609 · 916.381.8671 fax · www.buzzoates.com

LEASE AMENDMENT #1

This Lease Amendment #1 ("Amendment"), dated for reference purposes only **June 30, 2004**, is entered into by and between **Marvin L. Oates, as co-Trustee of the Marvin L. Oates Trust, and Frank C. Ramos** (collectively "Landlord"), and **Arcadia Biosciences, Inc., an Arizona Corporation** ("Tenant"). Landlord and Tenant are collectively referred to herein as the "Parties".

RECITALS

1. The Parties entered into that certain Lease ("Lease") dated May 17, 2003, regarding premises described therein as 202 Cousteau Place, Suite 200, Davis, California 95616 consisting of approximately 8,512 rentable square feet (the "Premises").

2. Pursuant to Paragraph 46 of the Lease, Landlord granted to Tenant a right of first refusal to lease the 3,039 rentable square feet (2,713 usable square feet) of space adjacent to the west of the Premises (the "Expansion Space"). On March 25, 2004, Tenant exercised its right of first refusal. As a result of Tenant's exercise of its right of first refusal, the Parties now desire to amend the Lease to memorialize the expansion of the Premises, an extension of the Lease term, and the granting of an additional tenant improvement allowance to Tenant.

AGREEMENT

The Parties agree as follows:

1. **SIZE:** Effective as of mutual execution of this Amendment, the size of the Premises shall be +3,039 OR 36 increased by 3,039 rentable square feet (2,713 usable square feet) from 8,512 rentable square feet (7,600 usable square feet) to a new total of 11,551 rentable square feet (10,313 usable square feet). The original Premises and Expansion Space are depicted on Exhibit "A" attached hereto. Tenant shall have no further right of first refusal.

2. **RENT:** Commencing upon issuance of a temporary or final certificate of occupancy for the Expansion Space following improvements to be constructed by Tenant's contractor in accordance with the Work Letter attached hereto as Exhibit B, Base Rent shall increase by $5,470.20 per month, from $15,321.60 per month to a new total of $20,791.80 per month and Tenant's schedule of Base Rent shall be is as follows:

	Current Base Rent	Expansion Base Rent	Total Base Rent
Upon Commencement, to June 30, 2005	$ 15,321.60	$ 5,470.20	$20,791.80 per month
July 1, 2005 — June 30, 2006	$ 15,747.20	$ 5,622.15	$21,369.35 per month
July 1, 2006 — June 30, 2007	$ 16,172.80	$ 5,774.10	$21,946.90 per month
July 1, 2007 — June 30, 2008	$ 16,598.40	$ 5,926.05	$22,524.45 per month
July 1, 2008 — June 30, 2009	$ 17,024.00	$ 6,078.00	$23,102.00 per month

3. **TENANT IMPROVEMENTS/ALLOWANCE:** The Expansion Space shall be delivered to Tenant in "As Is" condition and Tenant shall be solely responsible for furnishing its own improvements for the Expansion Space in accordance with the terms and conditions of the Work Letter attached hereto as "Exhibit "B" at Tenant's sole cost, subject to Landlord's obligation to provide an allowance of $27.00 per usable square foot as more particularly set forth in Exhibit B. HVAC and electricity monitoring equipment shall be installed by Tenant's Contractor (Harrison Construction) at Tenant's cost. Tenant shall use its best efforts to complete its improvements and obtain a temporary or final certificate of occupancy as soon as reasonably possible.

4. **PRIOR ALLOWANCE.** Tenant acknowledges that Landlord has fulfilled all of its obligations with respect to payment of any allowance for improvements for the original Premises.

5. **EXTENSION OF LEASE TERM:** The Term of the Lease shall be extended for an additional period of one (1) year. The term of the lease for the Expansion Space shall commence on the earlier of A.) substantial completion of the improvements by Tenant or B.) March 1, 2005. The Expiration Date of the Lease (formerly June 30, 2008) shall now be June 30, 2009.

6, **BASE YEAR:** The Expansion Space shall have a 2003 base year as described in Paragraph 46 of the Lease (Right of First Refusal).

March 2003

7. **LETTER OF CREDIT**: Tenant shall cause to be issued and delivered to Landlord within two weeks of mutual execution of this Amendment a revised Letter of Credit with the correct names, dates and dollar amounts as required by the Lease. The amount on the Letter of Credit will not be increased due to the Expansion Space.

All other terms and conditions of the Lease shall remain the same in full force and effect.

IN WITNESS WHEREOF, the Parties hereto have caused this Amendment to be executed as of the day and year written below.

Lessor:
Marvin L. Oates, as co-Trustee of the Marvin L. Oates Trust, and Frank C. Ramos

/s/ Marvin L. Oates
Marvin L. Oates, as co-Trustee of the Marvin L. Oates Trust

/s/ Frank C. Ramos
Frank C. Ramos

Date: 9/3/04

Lessee:
Arcadia Biosciences, Inc., an Arizona Corporation

By: /s/ Eric J. Rey
Eric J. Rey, President

Date: 8/25/04

Approved as to form:
/s/ 8/27/04
Office of the General Counsel Date
Approved as to financial terms:

/s/ 9-1-04
Finance Date
No Changes may be made after signatures above

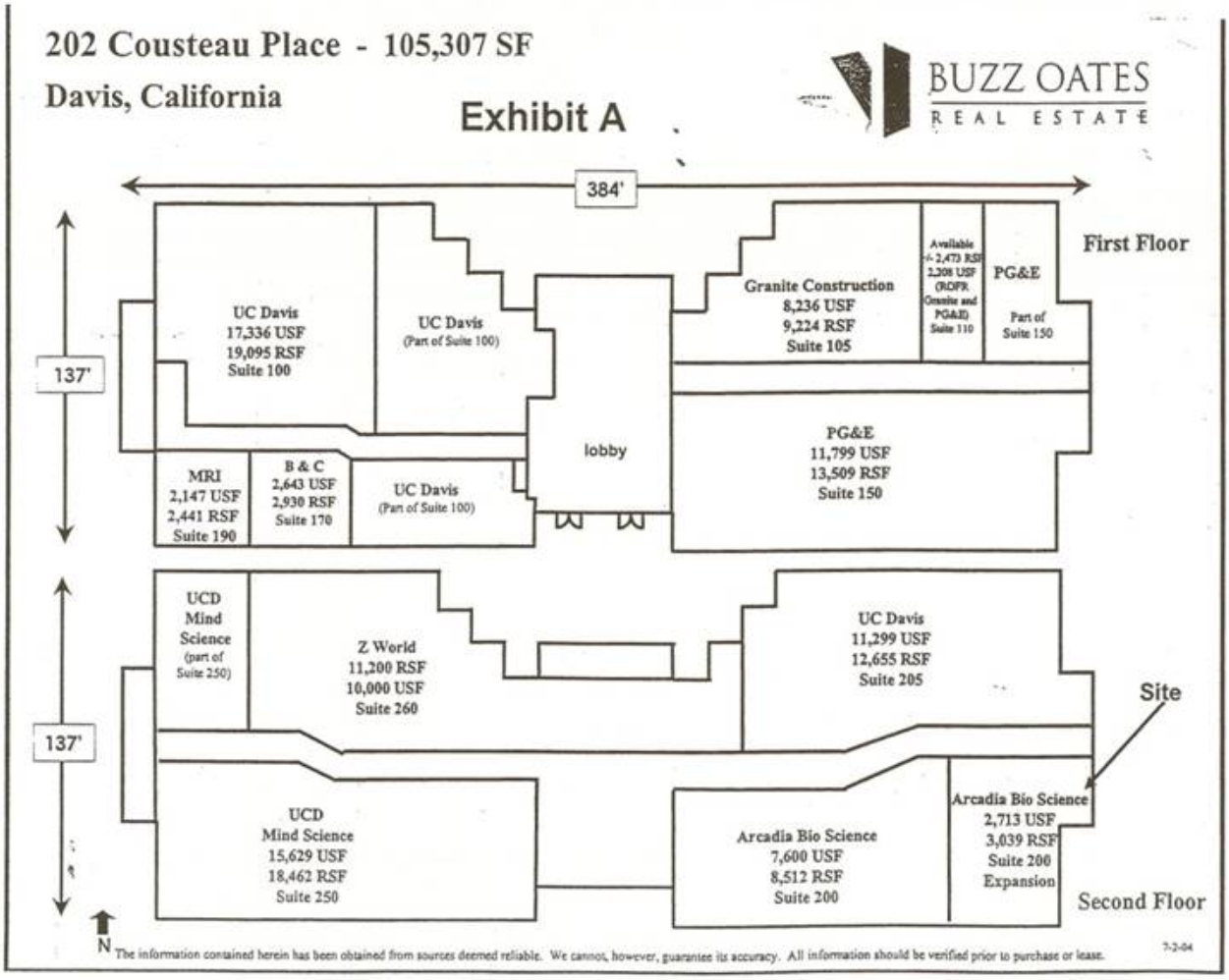


EXHIBIT B

WORK LETTER AGREEMENT

You (hereinafter called "Tenant") and we (hereinafter called "Landlord") are executing simultaneously with this Work Letter Agreement (the "Work Letter Agreement"), a written Lease Amendment #1 (the "Amendment") with respect to that certain Office Lease dated May 17, 2003 ("Lease") for certain Premises more particularly described in the Lease, in the building addressed at 202 Cousteau Place, Davis, California.

For and in consideration of the agreement to lease the Premises and the mutual covenants contained herein and in the Amendment, Landlord and Tenant hereby agree as follows:

1. **Lease Provisions.** Unless otherwise defined in this Work Letter Agreement, the capitalized terms used herein shall have the meaning assigned to them in the Lease. The terms and provisions of the Lease, insofar as they are applicable to this Work Letter Agreement are hereby incorporated herein by reference.

2. **Representatives.** Landlord hereby appoints Kevin F. Ramos as Landlord's representatives to act for Landlord in all matters covered by this Work Letter Agreement. Tenant hereby appoints Steve Harrison as Tenant's representatives to act for Tenant in all matters covered by this Work Letter Agreement. Notices under this Work Letter Agreement shall be given to the parties' representatives in the same manner as under the Lease. All inquiries, requests, instructions, authorizations and other communications with respect to the matters covered by this Work Letter Agreement shall be related to Landlord's representatives or Tenant's representatives, as the case may be. Tenant will not make any inquiries of or request to, and will not give any instructions or authorizations to, any other employee or agent of Landlord, including Landlord's architects, engineers, and contractors or any of their agents or employees, with regard to matters covered by this Work Letter Agreement. Either Landlord or Tenant may change its representatives at any time by written notice to the other.

3. **Work.** Tenant, at its sole cost and expense, shall perform, or cause to be performed, the work (the "Work") in the Expansion Space of the Premises provided for in the Approved Plans (as defined in Section 4 hereof). Subject to Tenant's satisfaction of the conditions specified in this Work Letter Agreement, Tenant shall be entitled to Landlord's Contribution (as defined in Section 9(b) below).

4. **Pre-Construction Activities.**

(a) Prior to Tenant's commencement of the Work, Tenant shall submit the following information and items to Landlord for Landlord's review and approval:

(i) The names and addresses of Tenant's contractors (and said contractor's subcontractors) and materialmen to be engaged by Tenant for the Work (individually, a "Tenant Contractor," and collectively, "Tenant's Contractors"). Landlord has the right to reasonably approve or disapprove all or any one or more of Tenant's Contractors. Landlord may, at its election, designate a list of approved contractors for performance of those portions of work involving electrical, mechanical, plumbing, heating, air conditioning or life safety systems, from which Tenant must select its contractors for such designated portions of work.

(ii) Certificates of insurance as hereinafter described. Tenant shall not permit Tenant's Contractors to commence work until the required insurance has been obtained and certified copies of policies or certificates have been delivered to Landlord.

(iii) The Plans (as hereinafter defined) for the Work, which Plans shall be subject to Landlord's approval in accordance with Section 4(b) below.

Tenant will update such information and items by notice to Landlord of any changes.

(b) As used herein the term "Approved Plans" shall mean the Plans (as hereinafter defined), as and when approved in writing by Landlord. As used herein, the term "Plans" shall mean the full and detailed architectural and engineering plans and specifications covering the Work (including, without limitation, architectural, mechanical and electrical working drawings for the Work). The Plans shall be subject to Landlord's approval and the approval of all local governmental authorities requiring approval of the work and/or the Approved Plan. Landlord shall give its approval or disapproval (giving general reasons in case of disapproval) of the Plans within ten (10) business days after their delivery to Landlord. Landlord agrees not to unreasonably withhold its approval of said Plans; provided, however, that Landlord shall not be deemed to have acted unreasonably if it withholds its approval of the Plans because, in Landlord's reasonable opinion: the Work as shown in the Plans is likely to adversely affect Building systems, the structure of the Building or the safety of the Building and/or its occupants; the Work as shown on the Plans might impair Landlord's ability to furnish services to Tenant or other tenants; the Work would increase the cost of operating the Building; the Work would violate any governmental laws, rules or ordinances (or interpretations thereof); the Work contains or uses hazardous or toxic materials or substances which are not customarily used in the building trade; the Work would adversely affect the appearance of the Building; the Work might materially adversely affect another tenant's premises; or the Work is prohibited by any mortgage or trust deed encumbering the Building. The foregoing reasons, however, shall not be exclusive of the reasons, for which Landlord may withhold consent, whether or not such other reasons are similar or dissimilar to the foregoing. If Landlord notifies Tenant that changes are required to the final Plans submitted by Tenant, Tenant

shall submit to Landlord, for its approval, the Plans amended in accordance with the changes so required. The Plans shall also be revised, and the Work shall be changed, all at Tenant's cost and expense, to incorporate any work required in the Premises by any local governmental field inspector. Landlord's approval of the Plans shall in no way be deemed to be (i) an acceptance or approval of any element therein contained which is in violation of any applicable laws, ordinances, regulations or other governmental requirements, or (ii) an assurance that work done pursuant to the Approved Plans will comply with all applicable laws (or with the interpretations thereof) or satisfy Tenant's objectives and needs.

(c) No Work shall be undertaken or commenced by Tenant in the Premises until (i) Tenant has delivered, and Landlord has approved, all items set forth in Section 4(a) above, (ii) all necessary building permits have been applied for and obtained by Tenant.

5. **Delays.** In the event Tenant fails to deliver or deliver in sufficient and accurate detail the information required under Section 4 above, or in the event Tenant, for any reason, fails to complete the Work on or before the Commencement Date, Tenant shall be responsible for Rent and all other obligations set forth in the Lease from the Commencement Date regardless of the degree of completion of the Work on such date, and no such delay in completion of the Work shall relieve Tenant of any of its obligations under the Lease.

6. **Change Orders.** All changes to the Approved Plans requested by Tenant must be approved by Landlord in advance of the implementation of such changes as part of the Work, which approval shall not be unreasonably conditioned or withheld and shall be delivered as soon as reasonably possible, but in no event later than five (5) business days after Tenant's request therefor. All delays caused by Tenant-initiated change orders, including, without limitation, any stoppage of work during the change order review process, are solely the responsibility of Tenant and shall cause no delay in the commencement of the Lease or the Rent and other obligations therein set forth. All increases in the cost of the Work resulting from such change orders shall be borne by Tenant.

7. **Standards Of Design And Construction And Conditions Of Tenant's Performance.** All work done in or upon the Premises by Tenant shall be done according to the standards set forth in this Section 7, except as the same may be modified in the Approved Plans approved by or on behalf of Landlord and Tenant.

(a) Tenant's Approved Plans and all design and construction of the Work shall comply with all applicable statutes, ordinances, regulations, laws, codes and industry standards, including, but not limited to, requirements of Landlord's fire insurance underwriters.

(b) Tenant shall, at its own cost and expense, obtain all required building permits and occupancy permits. Tenant's failure to obtain such permits shall not cause a delay in the commencement of the Lease Term or the obligation to pay Rent or any other obligations set forth in the Lease.

(c) Tenant's Contractors shall be licensed contractors, possessing good labor relations, capable of performing quality workmanship and working in harmony with Landlord's contractors and subcontractors and with other contractors and subcontractors in the Building. All work shall be coordinated with any other construction or other work in the Building in order not to adversely affect construction work being performed by or for Landlord or its tenants.

(d) Tenant shall use only new, first-class materials in the Work, except where explicitly shown in the Approved Plans, All Work shall be done in a good and workmanlike manner. Tenant shall obtain contractors' warranties of at least one (1) year duration from the completion of the Work against defects in workmanship and materials on all work performed and equipment installed in the Premises as part of the Work.

(e) Tenant and Tenant's Contractors shall make all reasonable efforts and take all steps appropriate to assure that all construction activities undertaken comport with the reasonable expectations of all tenants and other occupants of a fully-occupied (or substantially fully occupied) first-class office building and do not unreasonably interfere with the operation of the Building or with other tenants and occupants of the Building. In any event, Tenant shall comply with all reasonable rules and regulations existing from time to time at the Building. Tenant and Tenant's Contractors shall take all precautionary steps to minimize dust, noise and construction traffic, and to protect their facilities and the facilities of others affected by the Work and to properly police same. Construction equipment and materials are to be kept within the Premises and delivery and loading of equipment and materials shall be done at such locations and at such time as Landlord shall direct so as not to burden the construction or operation of the Building. If and as required by Landlord, the Premises shall be sealed off from the balance of the office space on the floor(s) containing the Premises so as to minimize the dispersement of dirt, debris and noise.

(f) Landlord shall have the right to order Tenant or any of Tenant's Contractors who violate the requirements imposed on Tenant or Tenant's Contractors in performing work to cease work and remove its equipment and employees from the Building. No such action by Landlord shall delay the commencement of the Lease or the obligation to pay Rent or any other obligations therein set forth.

(g) Utility costs or charges for any service (including HVAC, hoisting or freight elevator and the like) to the Premises shall be the responsibility of Tenant from and after the Commencement Date. Tenant shall pay for all support services provided by Landlord's contractors at Tenant's written request or at

Landlord's discretion resulting from breaches or defaults by Tenant under this Work Letter Agreement. All use of freight

elevators is subject to scheduling by Landlord and the rules and regulations of the Building. Tenant shall arrange and pay for removal of construction debris and shall not place debris in the Building's waste containers. If required by Applicable Law, Tenant shall sort and separate its waste and debris for recycling and/or environmental law compliance purposes.

(h) Tenant shall permit access to the Premises, and the Work shall be subject to inspection, by Landlord and Landlord's architects, engineers, contractors and other representatives, at all times during the period in which the Work is being constructed and installed and following completion of the Work.

(i) Tenant shall proceed with its work expeditiously, continuously and efficiently.

(j) Tenant shall have no authority to deviate from the Approved Plans in performance of the Work, except as authorized by Landlord and its designated representative in writing (which shall not be unreasonably conditioned, withheld or delayed). Tenant shall furnish to Landlord "as-built" drawings of the Work within thirty (30) days after completion of the Work.

(k) Landlord shall have the right to run utility lines, pipes, conduits, duct work and component parts of all mechanical and electrical systems where necessary or desirable through the Premises, to repair, alter, replace or remove the same, and to require Tenant to install and maintain proper access panels thereto, provided such work shall be performed at such times in such manner so as to minimize disruption to the conduct of Tenant's business in the Premises and the construction of Tenant's Work.

(1) Tenant shall impose on and enforce all applicable terms of this Work Letter Agreement against Tenant's architect and Tenant's Contractors.

8. Insurance And Indemnification.

(a) In addition to any insurance which may be required under the Lease, Tenant shall secure, pay for and maintain or cause Tenant's Contractors to secure, pay for and maintain during the continuance of the Work within the Building or Premises, insurance in the following minimum coverages and the following minimum limits of liability:

(i) Worker's Compensation and Employer's Liability Insurance with limits of not less than $500,000.00, or such higher amounts as may be required from time to time by any Employee Benefit Acts or other statutes applicable where the work is to be performed, and in any event sufficient to protect Tenant's Contractors from liability under the aforementioned acts.

(ii) Comprehensive General Liability Insurance (including Contractors' Protective Liability) in an amount not less than $1,000,000.00 per occurrence, whether involving bodily injury liability (or death resulting therefrom) or property damage liability or a combination thereof with a minimum aggregate limit of $2,000,000.00, and with umbrella coverage with limits not less than $5,000,000.00. Such insurance shall provide for explosion and collapse, completed operations coverage and broad form blanket contractual liability coverage and shall insure Tenant's Contractors against any and all claims for bodily injury, including death resulting therefrom, and damage to the property of others and arising from its operations under the contracts whether such operations are performed by Tenant's Contractors or by anyone directly or indirectly employed by any of them.

(iii) Comprehensive Automobile Liability Insurance, including the ownership, maintenance and operation of any automotive equipment, owned, hired, or non-owned in an amount not less than $500,000.00 for each person in one accident, and $1,000,000.00 for injuries sustained by two or more persons in any one accident and property damage liability in an amount not less than $1,000,000.00 for each accident. Such insurance shall insure Tenant's Contractors against any and all claims for bodily injury, including death resulting therefrom, and damage to the property of others arising from its operations under the contracts, whether such operations are performed by Tenant's Contractors, or by anyone directly or indirectly employed by any of them.

(iv) "All-risk" builder's risk insurance upon the entire Work to the full insurable value thereof. This insurance shall include the interests of Landlord and Tenant (and their respective contractors and subcontractors of any tier to the extent of any insurable interest therein) in the Work and shall insure against the perils of fire and extended coverage and shall include "all-risk" builder's risk insurance for physical loss or damage including, without duplication of coverage, theft vandalism and malicious mischief. If portions of the Work are stored off the site of the Building or in transit to said site are not covered under said "all-risk" builder's risk insurance, then Tenant shall effect and maintain similar property insurance on such portions of the Work. Any loss insured under said "all-risk" builder's risk insurance is to be adjusted with Landlord and Tenant.

(v) All policies (except the worker's compensation policy) shall be endorsed to include as additional insured parties the parties listed on, or required by, the Lease, Landlord's contractors, Landlord's architects, and their respective beneficiaries, partners, directors, officers, employees and agents, and such additional persons as Landlord may designate. The waiver of subrogation provisions contained in the Lease shall apply to all insurance policies (except the worker's compensation policy) to be obtained by Tenant pursuant to this Section. The insurance policy endorsements shall also provide that all additional insured parties shall be given thirty (30) days' prior written notice of any reduction, cancellation or non-renewal of coverage (except that ten (10) days' notice shall be sufficient in the case of cancellation for non-payment of premium) and shall provide that the insurance coverage afforded to the additional insured parties thereunder shall be primary to any insurance carried

independently by said additional insured parties. Additionally, where applicable, each policy shall contain a cross-liability and severability of interest clause.

(b) Without limitation of the indemnification provisions contained in the Lease, to the fullest extent permitted by law Tenant agrees to indemnify, protect, defend and hold harmless Landlord, the parties listed, or required by, the Lease to be named as additional insureds, Landlord's contractors, Landlord's architects, and their respective beneficiaries, partners, directors, officers, employees and agents ("Landlord's Parties"), from and against all claims, liabilities, losses, damages and expenses of whatever nature to the extent arising out of or in connection with the Work or the entry of Tenant or Tenant's Contractors into the Building and the Premises, including, without limitation, mechanic's liens, the cost of any repairs to the Premises or Building necessitated by activities of Tenant or Tenant's Contractors, bodily injury to persons (including, to the maximum extent provided by law, claims arising under the California Structural Work Act) or damage to the property of Tenant, its employees, agents, invitees, licenses or others. It is understood and agreed that the foregoing indemnity shall be in addition to the insurance requirements set forth above and shall not be in discharge of or in substitution for same or any other indemnity or

insurance provision of the Lease. The foregoing indemnity shall not apply to the extent such matter arises out of or results from the negligence or willful misconduct of Landlord or Landlord's Parties or a breach of the Lease by Landlord.

9. **Landlord's Contribution**.

(a) Contribution Amount. Landlord shall make a dollar contribution ("Landlord's Contribution") in the amount of Seventy-Three Thousand, Two Hundred fifty-one Dollars ($73,251.00) (which is Twenty-Seven Dollars ($27.00) per square foot of Usable Area of the of the Expansion Space) for application to the extent thereof to the cost of the Work. If the cost of the Work exceeds Landlord's Contribution, Tenant shall have sole responsibility for the payment of such excess cost except that Landlord shall be responsible for any such excess costs to the extent caused by negligence or willful misconduct of the Landlord Parties or breach of this Lease by Landlord. If the cost of the Work is less than Landlord's Contribution, Tenant shall not be entitled to any payment or credit for such excess amount. Notwithstanding anything herein to the contrary, Landlord may deduct from Landlord's Contribution any amounts due Landlord or its architects or engineers under this Work Letter Agreement before disbursing any other portion of Landlord's Contribution. **Tenant to be responsible for the installation of HVAC monitoring equipment at their sole cost.**

(b) Payment of Contribution. Landlord shall make periodic disbursements of Landlord's Contribution for the benefit of Tenant, not more often than once per month. Landlord shall authorize and make payment or release of monies for the benefit of Tenant to Tenant and/or the party designated by Tenant within five (5) days after receipt of a request for payment approved by Tenant and any supporting information reasonably required in good faith by Landlord.

Tenant must, in order to receive a disbursement of the Landlord's Contribution, meet all of the following criteria:

(i) Tenant or Tenant's contractors shall submit for Landlord's approval copies of plans and specifications for Tenant's proposed improvements;

(ii) Prior to commencement of actual construction, Tenant must submit to Landlord a copy of the approved building permit(s) from the appropriate governmental authority; and

(iii) Prior to receiving progress payments for the tenant improvements (subject to a 10% retention), Tenant shall submit to Landlord a statement of Tenant's contractor or architect that the work is complete to the extent that payment is requested.

Upon completion of the Work, and in order to receive the final amounts owed (including the ten percent (10%) retention amount from Landlord, Tenant shall provide Landlord with the following:

(i) Written proof (a fully signed "Certificate of Occupancy", "Certificate of Completion" or other document authorizing Tenant's occupancy of the Premises from the appropriate governmental authority) that the improvements were substantially completed to the satisfaction of the local building department;

(ii) Complete original As-Built plans and specifications;

(iii) A detailed breakdown of the total costs of the Work;

(iv) Tenant's written acknowledgment that the Work is substantially complete and Tenant is reasonably satisfied with the completion of the Work, except for any punchlist items;

(v) Full and final waivers of liens and contractors' affidavits and statements, in such form as may be reasonably required by Landlord, Landlord's title insurance company and Landlord's construction or permanent lender, if any, from all parties performing labor or supplying materials or services in connection with the Work showing that all of said parties have been compensated in full and waiving all liens in connection with the Premises and Building.

(vi) The parties will mutually cooperate to enforce any contractor warranties issued in connection with the tenant improvement work.

If Landlord fails to fulfill its obligation to disburse Landlord's Contribution following five (5) business days' notice from Tenant and Landlord's failure to cure within such period, Tenant shall have the following rights, which rights shall be cumulative and in addition to any rights or remedies available to Tenant under the Lease, at law or in equity; (i) to cease performance of all or any portion of the Work, or (ii) continue to perform the Work, and offset any outstanding sums plus interest at ten percent (10%) per annum against Tenant's obligation to pay Rent next coming due under this Lease.

10. **Intentionally Omitted.**

11. **On-Site Project Manager**. As a condition of Tenant's right to commence and perform the Work, Tenant shall engage the services of an on-site project manager approved in advance by and reasonably acceptable to Landlord, who will be charged with the task of performing daily supervision of the Work. Such on-site manager shall be familiar with all rules and regulations and procedures of the Building and all personnel of the Building engaged directly or indirectly in the management, operation and construction of the Building. Such on-site project manager shall be accountable and responsible to Tenant and to Landlord and, where necessary, shall serve as a liaison between Landlord and Tenant with respect to the Work. The entire cost and expense of the on-site project manager shall be borne and paid for by Tenant (subject to Tenant's right to use all or any part of Landlord's Contribution to reimburse Tenant for the same.)

12. **Construction Dispute Resolution**.

(a) If any dispute arises between Landlord and Tenant, solely with respect to any matter relating to the Work or the initial construction or buildout of the Building or the Premises, the parties shall attempt in good faith to settle the dispute by mediation under the Construction Industry Mediation Rules of the American Arbitration Association. If such dispute is not resolved by mediation within thirty (30) days of the first written request for mediation, then such dispute shall be resolved by arbitration. Landlord and Tenant each hereby waive its right to seek a judicial determination of whether either party is in breach of, or default under, any of the terms or provisions of this Work Letter Agreement, or under the Lease, to the extent that the alleged breach or default under the Lease relates to the initial construction or buildout of the Building or the Premises. The venue for any mediation or arbitration proceedings under this Work Letter Agreement shall be in Sacramento County, California. The requirement that all disputes be resolved through mediation and then arbitration pursuant to this Section shall constitute an absolute defense to any court action filed by one of the parties hereto against the other, and shall enable the party against whom such action is filed to cause such action to be dismissed or set aside at any time.

(b) If a right to arbitration arises pursuant to Section 12(a), either party may serve upon the other party and file with the American Arbitration Association San Francisco Office a written notice demanding that such dispute be resolved by arbitration pursuant to this Section 12(b). Within five (5) days following such request for arbitration, the parties shall exchange a list of acceptable arbitrators and select one from those lists. If they are unable to agree on an arbitrator, an arbitrator shall be appointed within the shortest possible period by the assigned Case Administrator in the American Arbitration Association San Francisco Office or any successor association or body of comparable standing if the American Arbitration Association is not then in existence. Any controversy or claim arising out of or relating to this Work Letter Agreement or the breach of this Work Letter Agreement shall be settled by one arbitrator in accordance with the commercial rules of the American Arbitration Association, Judgment on the award rendered by the arbitrator may be entered in any court having jurisdiction over the dispute. The arbitrator shall assess its fee, all other fees and costs of any such arbitration proceeding and reasonable attorneys' fees, against the party to whom, in the arbitrator's opinion, is not the prevailing party.

(c) Notwithstanding anything to the contrary contained in this Work Letter Agreement, the parties shall each have the right to file with a court of competent jurisdiction an application for temporary or preliminary injunctive relief, writ of attachment, writ of possession, temporary protective order, or appointment of a receiver if the arbitration award to which the applicant may be entitled may be rendered ineffectual in the absence of such relief or if there is no other adequate remedy. Such application shall not waive a party's arbitration rights under this Work Letter Agreement.

(d) Notwithstanding anything to the contrary contained in this Work Letter Agreement, if Landlord fails to pay Tenant any amount due under the terms of this Work Letter Agreement, Tenant may record a mechanic's lien against the Property and may commence an action to foreclose such mechanic's lien in accordance with State of California law; however, if arbitration has been commenced and an award issued prior to the date Tenant commences an action to foreclose any mechanic's lien recorded against the Property, Tenant agrees to be bound by such arbitration award and shall waive any right to foreclose its mechanic's lien for an amount in excess of the arbitration award.

(e) During any mediation or arbitration proceedings, Landlord and Tenant shall continue to carry out their responsibilities under this Work Letter Agreement. The parties' respective obligations contained in this Section 12(e) shall be specifically enforceable under applicable law in any court having jurisdiction thereof.

13. **Additional Provisions**.

(a) Time is of the essence of this Work Letter Agreement.

(b) If the Plans for the Work require the construction and installation of more fire hose cabinets or telephone/electrical closets than the number regularly provided by Landlord in the core of the Building in which the Premises are located, Tenant agrees to pay all costs and expenses arising from the construction and installation of such additional fire hose cabinets or telephone/electrical closets.

(c) Tenant agrees that unless otherwise expressly provided in the Lease, neither this Agreement nor the Lease grants Tenant any right of access to the roof of the Building. Should Landlord, in connection with this Agreement or the Lease, agree to mount equipment of any nature on the Building roof, such equipment shall, at Landlord's option, either be maintained and installed by Landlord, or maintained and installed under Landlord's direction, unless this Agreement expressly provides otherwise, all at Tenant's expense. Should this Agreement or the Lease permit Tenant to install any equipment on the roof, any modifications to the roof or the roof's structure to accommodate that equipment shall be made at Tenant's sole cost and expense.

(d) Tenant agrees that should the nature of its layout or any of its equipment, fixtures or furnishings to be placed in the Premises place a burden in excess of the Building's designed load, which is 100 pounds per square foot, Tenant agrees to pay Landlord the cost of any modifications to the Building necessary to accommodate Tenant's furniture, furnishings or layout, as well as any design, engineering or other professional fees incurred by Landlord in connection with such modifications.

(e) Any person signing this Work Letter Agreement on behalf of Landlord and Tenant warrants and represents he has authority to sign and deliver this Work Letter Agreement and bind the party on behalf of which he has signed.

(f) If Tenant fails to make any payment relating to the Work as required hereunder within fifteen (15) days after written notice from Landlord specifying that such amount is due and payable, Landlord, at its option, may complete the Work pursuant to the Approved Plans and continue to hold Tenant liable for the costs thereof and all other costs due to Landlord. All amounts due from Tenant hereunder shall be deemed to be Rent due under the Lease. Tenant's failure to pay any amounts owed by Tenant hereunder when due or Tenant's failure to perform its obligations hereunder shall also constitute a default under the Lease (subject to the notice and cure provisions referenced in Section 27 of the Lease) and Landlord shall have all the rights and remedies granted to Landlord under the Lease for nonpayment of any amounts owed thereunder or failure by Tenant to perform its obligations thereunder.

(g) This Work Letter Agreement sets forth the entire agreement of Tenant and Landlord regarding the Work. This Work Letter Agreement may only be amended if in writing, duly executed by both Landlord and Tenant.

14. **Alterations**. Any alterations or improvements desired by Tenant after the completion of the Work shall be subject to the provisions of Section 12 (entitled "Alterations and Additions") of the Lease.

If the foregoing correctly sets forth our understanding, please sign this Agreement where indicated below.

Landlord:

Marvin L. Oates, as co-Trustee of the Marvin L. Oates Trust, and Frank C. Ramos

/s/ Marvin L. Oates
Marvin L. Oates, as co-Trustee of the Marvin L. Oates Trust

/s/ Frank C. Ramos

Tenant:

Arcadia Biosciences, Inc., an Arizona Corporation

By: /s/ Eric J. Rey
Eric J. Rey, President

Frank C. Ramos **Date: 8/25/04**

Date: **9/3/04**

Approved as to form
/s/ 8/27/04
office of the General Counsel Date
Approved as to financial terms:

/s/ 9-1-04
Finance Date:
No change may be made after signatures above

6

ENTERED 3/3/05

COMMENCEMENT OF AMENDMENT #1

Date: **January 28, 2005**

This lease commencement agreement pertains to **Amendment #1** dated **June 30, 2004**, by and between **Marvin L. Oates, as co-Trustee of the Marvin L. Oates Trust and Frank C. Ramos** (Lessor) and **Arcadia Biosciences, Inc., an Arizona Corporation** (Lessee) for the premises located at 202 Cousteau Place, Suite 200, Davis, California 95616 and consisting of approximately 3,039 rentable square feet within a *multi tenant office* building of approximately 105,307 square feet.

Whereas, said Lessee's 53 month lease term is to commence on the date indicated below, in which the Lessee has substantially completed all work required, if any, to be performed by it under the terms and conditions of the lease agreement.

In accordance with the above, the parties hereto agree that the term of the lease shall commence on February 1, 2005, and expire on June 30, 2009.

All other terms and conditions of said Lease are hereby reaffirmed as being in full force and effect.

Lessor:
Marvin L. Oates, as co-Trustee of the Marvin L. Oates Trust, and Frank C. Ramos

Lessee:
Arcadia Biosciences, Inc., an Arizona Corporation

/s/ Marvin L. Oates
Marvin L. Oates, as co-Trustee of the Marvin L. Oates Trust

By: /s/ Eric J. Rey
Eric J. Rey, President & Chief Operating Officer

/s/ Frank C. Ramos
Frank C. Ramos

Date: 2-4-05

Date: 2/10/05

March 2003

Pam Haley

From: Drew.W.Keilen@ wellsfargo.com
Sent: Thursday, March 23, 2006 2:35PM
To: Pam Haley
Subject: RE: Letter of Credit Fees - Marvin L. Oates Beneficiary, L/C #NZS478986

Hello Pam,

The presentation dates are different from the expiration dates. The letter of credit states "Notwithstanding any other provision of this Letter of Credit, this Letter of Credit expires at our above office on March 7, 2005, but shall be automatically extended, without written amendment, to March 7 in each succeeding calendar year up to March 7, 2008, and then to , but not beyond, June 30, 2008.

The letter of credit was recently extended on March 7, 2006 for one year. We are currently in the presentation period after June 30, 2005 and before June 30, 2006 which is $96,959.04. I hope this clarifies any confusion. If you would like me to fax you a copy of the L/C I would be more than willing to do so.

Thanks,

Drew W. Keilen

Private Banker
Wells Fargo PCS
(480) 348-4305 P
(480) 348-4848 F
drew.w.keilen@wellsfargo.com

From: Pam Haley [mailto:pam.haley@arcadiabio.com]
Sent: Thursday, March 23, 2006 12:49 PM
To: Keilen, Drew w.
Subject: Letter of Credit Fees - Marvin L. Oates Beneficiary, L/C #NZS478986

Hi Drew,

Thanks for your time on the phone earlier today. I started to write an email, explaining to my supervisor why it is correct that the $1,474 fee is calculated on the Maximum Amount of $96,600 for the Presentation Period After March 7, 2005 and on or before March 7, 2006 instead of the $64,400 for the period After March 7, 2006 and on or before March 7, 2007...but I couldn't make sense of it again! The invoice states the amount is calculated in advance on $96,959.04 from 3/8/06 - 3/7/07. Could you please email me a brief explanation?

Thanks a lot,
Pam

Pam Haley
Accounting Manager
Arcadia Biosciences, Inc.
2390 E. Camelback Road
Suite 440
Phoenix, AZ 85016
602.474.3782 Direct Line
602.474.3789 Main Line
928.441.1582 Fax
www.arcadiabio.com

3/23/2006

Operations Group
Northern California
One Front Street, 21st Floor
San Francisco, CA 94111

WELLS FARGO BANK

DEBIT INVOICE
****

DATE: MARCH 10, 2006
OUR L/C NO. NZS478986

MAIL TO:

EXETER LIFE SCIENCES, INC.,
4455 E CAMEL BACK ROAD, SUITE B200
PHOENIX, AZ 85018

BENEFICIARY: MARVIN L. OATES, AS CO-TRUSTEE OF THE MARVIN OATES

AMOUNT REPRESENTS STANDBY PERIODIC COMMISSION TO BE COLLECTED IN ADVANCE ON USD96,959.04 FROM 03/08/2006 THROUGH 03/07/2007 AT 1.50% P.A. FOR 365 DAYS ON 360 DAY BASIS.

TOTAL:	USD	1, 474.59

WE ARE REQUESTING PAYMENT FOR THE TOTAL AMOUNT.

PLEASE CONTACT OUR HELPLINE BY TELEPHONE AT (800) 798-2815 OPTION NO. 1 OR BY FAX AT (415) 296-8905 REGARDING ANY INQUIRIES.

CC: PRIVATE BKG SCOTTSDALE (W) (ATTN: JOHN C PARRILLI TEL: 480-348-4396)
MAC: S4035-012
AU: 4398

Original

This is *an integral part of Letter of Credit No. NZS478986*

As used below, the term "Conforming Draft" means a draft presented to us under and in compliance with the terms of this Letter of Credit, and the term "Business Day" means a day on which we are open at our above address in San Francisco, California to conduct our Letter of Credit business. Notwithstanding any provision to the contrary in the Uniform Customs and Practice For Documentary Credits (1993 Revision), International Chamber of Commerce Publication

No. 500, if March 7, 2004 or any other date specified below under the column titled “Presentation Periods” is not a Business Day then such date shall be automatically extended to the next succeeding date which is a Business Day.

Only one Conforming Draft may be presented to us, and the amount of the Conforming Draft may not exceed the amount set forth below under the column titled “Maximum Amount” directly opposite the time period specified below under the column titled “Presentation Periods” during which the Conforming Draft is presented;

Presentation Period	Maximum Amount	
On or before March 7, 2004	US$	161,000.00
After March 7, 2004 and on or before March 7, 2005	US$	128,800.00
After March 7, 2005 and on or before March 7, 2006	US$	96,600.00
After March 7, 2006 and on or before March 7, 2007	US$	64,400.00
After March 7, 2007 and on or before the Expiration Date	US$	32,200.00

Your failure to present to us a conforming draft during any of the presentation periods listed above shall not affect your right to present a conforming draft hereunder during any or each subsequent presentation period listed above.

This Letter of Credit is subject to the Uniform Customs and Practice For Documentary Credits (1993 Revision), International Chamber of Commerce Publication No. 500, and engages us in accordance with the terms thereof.

We hereby engage with you that each draft drawn and presented to us in compliance with the terms and provisions of this Letter of Credit will be duly honored by payment to you of the amount requested.

This is an integral part of Letter of Credit No. NZS478986

Very truly yours,

WELLS FARGO BANK, N. A.

By: **/s/**
Authorized Signature
SOCCT LOZANO

WELLS FARGO BANK, N.A.
TRADE SERVICES DIVISION, NORTHERN CALIFORNIA
525 Market Street, 25th Floor
San Francisco, California 94105
Contact Phones: 1(800) 798-2815
Email: sftrade@wellsfargo.com

IRREVOCABLE LETTER OF CREDIT

BENEFICIARY:

Buzz Oates Management Services
8615 Elder Creek Road
Sacramento, CA 95828

Letter of Credit No.: **NZS478986**
Date: April 10, 2003

At the request and for the account of Exeter Life Sciences, Inc. 4455 Camelback, Road, Suite B200, Phoenix, AZ 85018, we hereby establish our irrevocable Letter of Credit in your favor in the amount of One Hundred Sixty One Thousand and NO/100 United States Dollars (US$161,000.00). This Letter of Credit is available with us at our above office by payment of your draft drawn on us at sight.

Only one draft may be drawn and presented under the Letter of Credit and the amount of such draft may be less than the full amount of the Letter of Credit.

Such draft must also be accompanied by the original of this Letter of Credit for our endorsement on this Letter of Credit of our payment of such draft.

The draft must be marked "**DRAWN UNDER WELLS FARGO BANK, N. A. LETTER OF CREDIT NO. NZS478986."**

This Letter of Credit expires at our above office on March 7, 2004, but shall be automatically extended, without written amendment, to March 7 in each succeeding calendar year up to, but not beyond, March, 7, 2008 unless we have sent written notice to you at your address above by registered mail or express courier that we elect not to renew this Letter of Credit beyond the date specified in such notice (the "Expiration Date") which Expiration Date will be March 7, 2004 or any subsequent March 7 occurring before March 7, 2008 and be at least 30 calendar days after the date we send you such notice.

LEASE AMENDMENT NO. 2

This Lease Amendment No. **2** (the "Amendment"), dated for reference purposes only, **August 22, 2007** entered into by and between **MARVIN L. OATES,** AS **CO-TRUSTEE OF THE MARVIN L. OATES TRUST, AND FRANK C. RAMOS AND JOANNE M. RAMOS FAMILY TRUST DATED SEPTEMBER 22, 2005** (collectively "Landlord"), and **ARCADIA BIOSCIENCES, INC., AN ARIZONA CORPORATION** ("Tenant"). Landlord and Tenant are collectively referred to herein as the "Parties".

RECITALS

1. Landlord (or their predecessors in interest) and Tenant entered into that certain lease dated May 17, 2003 (the "Lease") with respect to the premises described therein as 202 Cousteau Place, Suite 200, Davis, CA, and consisting of approximately 8,512 rentable square feet of office space ("Original Premises");

2. Landlord (or their predecessors in interest) and Tenant subsequently entered into that certain Lease Amendment #1 dated June 30, 2004 ("Lease Amendment #1") in which Tenant exercised its Right of First Refusal, as described in Section 46 of the Lease, and expanded the Original Premises by approximately 3,039 rentable square feet adjacent to the west of the Original Premises ("Expansion Premises #1"). The Original Premise sand Expansion Premises #1 shall collectively be referred to as the "Premises"

3. The Parties now desire to amend the Lease to further increase the rentable square feet of the Premises, modify the Base Rent and Tenant's Share of the Premises, extend the term of the Lease, and to agree on certain other matters pertaining to the Lease and the Premises.

4. Any capitalized term used in this Amendment but not defined in this Amendment shall have the meaning assigned to it under the Lease.

AGREEMENT

THEREFORE, in consideration of the covenants and agreements contained herein, the parties hereby mutually agree as follows:

1. Expansion of Premises. Effective on the "Effective Date" (defined below), the Premises shall be expanded to include the approximately 9,224 rentable square feet (8,236 usf) area described as Suite 105 located on the first floor of the Building and depicted on Exhibit A attached hereto as "Expansion Premises #2". Therefore, hereinafter the Premises and Expansion Premises #2 shall collectively be referred to as the "Premises".

   As a result of the expansion, the Premises shall consist of approximately 20,775 rentable square feet (18,550 usf). For purposes of this Amendment, the Effective Date shall be September 1, 2007, provided that the effectiveness of this Amendment is conditioned on Landlord obtaining possession of Expansion Premises #2 from the existing Tenant, Granite Construction, prior to the Effective Date. If Landlord cannot obtain possession prior to such date, Landlord will use reasonable efforts to obtain possession as soon thereafter as possible, and the Effective Date will be modified as agreed by the Parties. In no event will Tenant be bound to lease Expansion Premises #2 if Landlord is unable to obtain possession by September 30, 2007. Tenant's obligation to lease Expansion Premises #2 under this Amendment is subject to the condition precedent of City of Davis approval of alterations as stipulated in Section 8 below, or alternative arrangements to accommodate the Tenant's HVAC requirements as further described in paragraph 9 below.

2. Tenant's Share. As of the Effective Date, Tenant's Share of Operating Costs and Taxes for the Premises shall increase from 10.97 to 19.66%.

3. Delivery of Expansion Premises #2. Landlord shall deliver possession of the Expansion Premises #2 in good order and satisfactory condition.

4. Expiration Date. The Expiration Date of the Lease shall be extended for an additional thirty six (36) months, from June 30, 2009 to June 30, 2012.

5. Adjustment of Rent. As the Effective Date, the Current Monthly Full Service Gross Base Rent for the Premises shall be adjusted as follows:

Base Rental Period	Current Base Rent	Expansion Premises #2 Base Rent	Total Base Rent
09/01/07 – 10/31/07:	$ 22,524.45	None	$ 22,524.45
11/01/07 – 12/31/07:	$ 22,524.45	$ 9,224.00	$ 31,748.45
01/01/08 – 06/30/08:	$ 22,524.45	$ 18,448.00	$ 40,972.45
07/01/08 – 06/30/09:	$ 23,102.00	$ 18,909.20	$ 42,011.20
07/01/09 – 06/30/10:	$ 23,679.55	$ 19,370.40	$ 43,049.95
07/01/10 – 06/30/11:	$ 24,257.10	$ 19,831.60	$ 44,088.70
07/01/11 – 06/30/12:	$ 24,834.65	$ 20,292.80	$ 45,127.45

6. Right of First Refusal. The Parties hereby agree that Tenant has exercised its Right of First Refusal as described in Section 46 of the Lease and that such right is now void and of no further effect.

7. Option to Renew. The Parties hereby agree that Tenant has exercised the first of three options to extend the Term of the Lease as described in Section 45 of the Lease and Tenant shall hereby retain two (2) remaining Options to Renew as described therein.

8. Alterations. Notwithstanding Section 13 of the Lease, Tenant shall have the right to install, at Tenant's sole cost, a block wall, concrete pad and walkway and gate entrance outside of the Premises on the southern portion of the Building adjacent to Suite 105 to create a visual barrier of Tenant's HVAC equipment,

subject to the City of Davis approvals and Landlord's reasonable approval of Tenant's design drawings. Such wall shall integrate plant material to grow up the wall and be fed by the Building irrigation system. Any and all additional Alterations shall be made in accordance with Section 13 of the Lease.

9. Tenant HVAC. Notwithstanding Section 13 of the Lease, Tenant shall be permitted to install supplemental HVAC equipment located within the Premises and outside and adjacent to the Premises as described above, subject to Landlord's written review and approval of Tenant's electrical, mechanical and design drawings prior to any such installation. Such HVAC equipment shall be maintained and repaired by Tenant throughout the term of the Lease at Tenant's sole cost and shall be separately metered by Tenant, at Tenant's sole cost, and any and all utility charges and fees applicable thereto shall be contracted for and payable by Tenant. Landlord, at Landlord's sole option, shall have the right to require Tenant to remove such HVAC equipment immediately prior to the end of the term of the Lease at Tenant's sole cost. In the event that Landlord's waives the requirement for Tenant to remove such HVAC equipment, such equipment shall become the sole property of Landlord.

10. Subleasing. Notwithstanding the provisions of Section 17 of the Lease, Tenant shall be permitted to sublease the Original Premises, Expansion Premises #1 and/or Expansion Premises #2 pursuant to the terms and conditions contained in Section 17, with the sole exception that Landlord hereby agrees that it shall not exercise its said right to sublet such space or terminate the Lease as described in the third sentence of Section 17 (b) thereto. In addition, Tenant shall not be required to sublease such space at the same terms as the Lease as required in the first sentence of Section 17 (b) (ii) provided therein.

11. Tenant Parking. Notwithstanding the terms and conditions contained in Section 2 (o) of the Lease, Landlord and Tenant hereby agree that Tenant be permitted to use up to eighty (80) parking spaces at the Building on a non-exclusive basis during the term of this Lease and any extensions thereto.

12. Lease Status. Tenant represents and certifies to Landlord that, to the best of Tenant's actual knowledge, as of the date of this Amendment: (a) Landlord is not in default under the Lease; and (b); Tenant does not have any defenses or offsets to payment of rent and performance of its obligations under the Lease as and when same becomes due; and (c) no actions, whether voluntary or otherwise, are pending against Tenant under the bankruptcy laws of the United States or any state thereof.

13. Leasing Commissions. Tenant represents that no brokerage commissions or consulting fees shall be payable on behalf of Tenant and each party agrees to indemnify the other against any.

14. Counterparts. This Amendment may be executed in two or more counterparts, each of which shall be deemed an original, but all of which together constitute one and the same instrument.

All other terms and conditions of the Lease shall remain the same in full force and effect.

IN WITNESS WHEREOF, the Parties hereto have caused this Amendment to be executed as of the day and year written below.

LANDLORD:

/s/ MARVIN L. OATES
MARVIN L. OATES, AS CO-TRUSTEE
OF THE MARVIN L. OATES TRUST

THE FRANK C. RAMOS AND JOANNE
M. RAMOS FAMILY TRUST DATED
SEPTEMBER 22, 2005

By: /s/ Frank C. Ramos
Frank C. Ramos, Trustee

By: /s/ Joanne M. Ramos
Joanne M. Ramos, Trustee

Date: September 4, 2007

TENANT:

ARCADIA BIOSCIENCES, INC.
an Arizona corporation

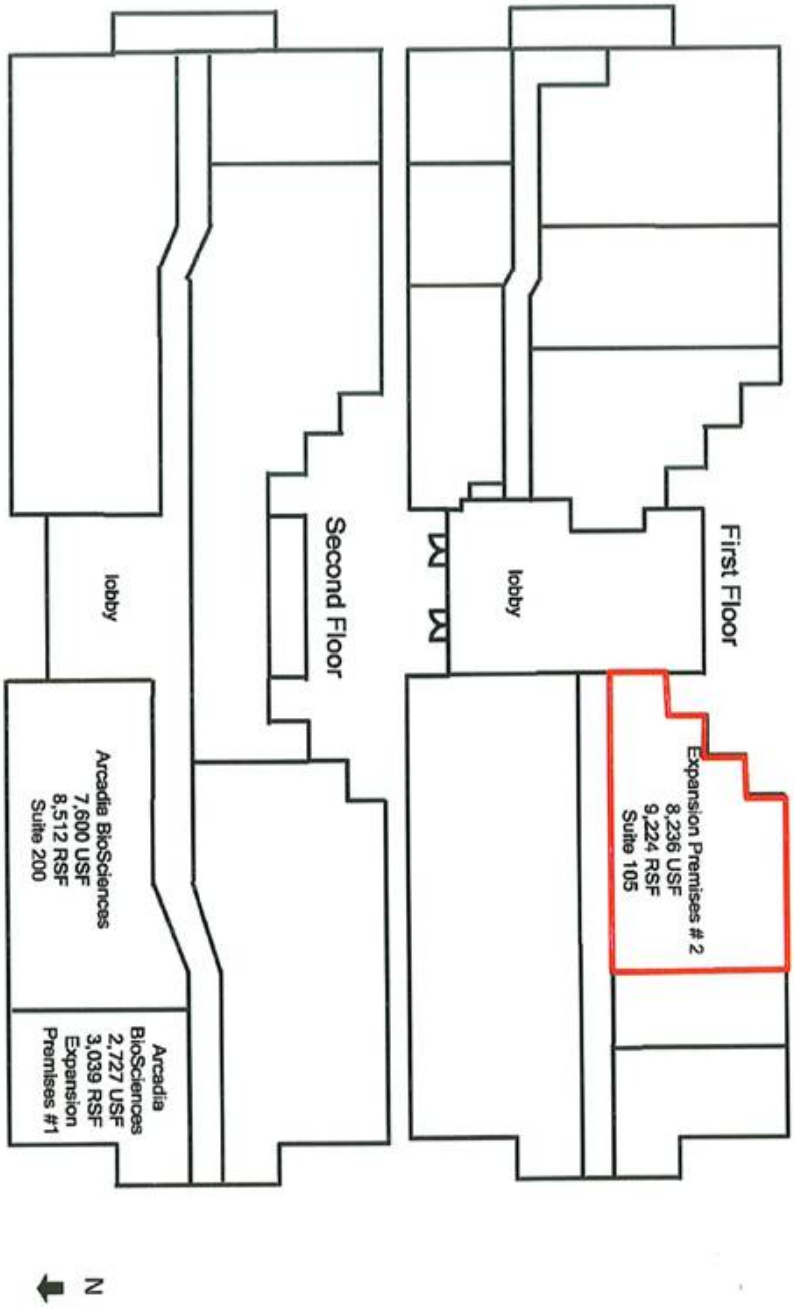
By: /s/ Eric J. Rey
Eric J. Rey

Title: President & Chief Executive Officer

Dated: August 24, 2007

EXHIBIT A

EXPANSION PREMISES #2



LEASE AMENDMENT NO. 3

This Lease Amendment No. 3 (the **"Third Amendment"**), dated for reference purposes only **May 16, 2012,** is entered into by and between **Buzz Oates LLC,** a California limited liability company (successor-in-interest to The Marvin L. Oates Trust), and **The Frank C. Ramos and Joanne M. Ramos Family Trust,** dated September 22, 2005 (collectively **"Landlord"**), and **Arcadia Biosciences, Inc.,** an Arizona corporation (**"Tenant"**). Landlord and Tenant are collectively referred to herein as the **"Parties"** or individually a **"Party".**

RECITALS

1. Landlord and Tenant entered into that certain lease dated for reference purposes only May 17, 2003, as amended by those certain amendments dated for reference purposes only June 30, 2004 and August 22, 2007 (collectively, the **"Lease"**) with respect to the premises described therein as Suite 200 containing approximately 11,551 rentable square feet (10,313 usable square feet) and Suite 105 containing approximately 9,224 rentable square feet (8,237 usable square feet), for approximately a combined 20,775 rentable square feet (18,550 usable square feet), which Suites are a portion of the "Building" containing approximately 105,307 rentable square feet commonly known by the street address of 202 Cousteau Place, located in the City of Davis, County of Yolo, State of California, with zip code 95616 (the **"Premises"**).

2. The Parties now desire to amend the Lease to extend the Term of the Lease upon the terms and conditions set forth in this Third Amendment.

AGREEMENT

THEREFORE, in consideration of the covenants and agreements contained herein, the Parties hereby mutually agree as follows:

1. Modification of Lease Term. The Parties agree that the existing Term of the Lease shall be extended by thirty six (36) months. The Expiration Date of the Lease (formerly June 30, 2012) shall now be June 30, 2015.

2. Adjustment of Base Rent. Effective July 1, 2012, Base Rent shall be in accordance with the Rent Schedule set forth below:

7/1/12 – 6/30/13	$	38,433.75 per month
7/1/13 – 6/30/14	$	39,472.50 per month
7/1/14 – 6/30/15	$	40,511.25 per month

3. Option to Renew. The Parties hereby acknowledge and agree that, upon the terms and conditions set forth in this Third Amendment, Tenant has exercised the second of its three (3) options to renew provided for in Paragraph 45 of the Lease.

4. Brokers. Landlord and Tenant each represent to the other that they have had no dealings with any real estate broker or agent in connection with the negotiation of this Third Amendment, except for Buzz Oates Real Estate (Landlord's Broker) and that no other real estate broker or agent is entitled to a commission or finder's fee in connection with this Third Amendment. Each Party shall indemnify, protect, defend, and hold harmless the other Party against all claims or liability for any commission, finder's fee, or equivalent compensation alleged to be owing on account of the indemnifying Party's dealings with any real estate broker or agent other than Landlord's Broker. In connection with this Third Amendment, Landlord agrees to pay a commission to Landlord's Broker pursuant to the terms of a separate agreement and Tenant shall have no liability for payment of any commission to Landlord's Broker. The terms of this Paragraph shall survive the expiration or earlier termination of the Lease.

5. Lease Status. Tenant warrants, represents and certifies to Landlord that, to the best of Tenant's actual knowledge, as of the date of this Third Amendment: (a) Landlord is not in default under the Lease; (b) Tenant has accepted possession and now occupies the Premises and is currently open for business; (c) Tenant does not have any defenses or offsets to payment of rent and performance of its obligations under the Lease as and when same becomes due; (d) Tenant has not made any assignment, sublease, transfer, or conveyance of the Lease or any interest therein or in the Premises; (e) no actions, whether voluntary of otherwise, are pending against Tenant under the bankruptcy laws of the United States or any state thereof; and (f) except as otherwise specifically provided for in Paragraph 45 of the Lease and Paragraph 3 of this Third Amendment, the Lease does not gram Tenant any right or option to extend the term of the Lease, to further expand the Premises or to terminate the Lease.

6. Counterparts. This Third Amendment may be executed in two or more counterparts, each of which

shall be deemed an original, but all of which together constitute one and the same instrument

7. All other terms and conditions of the Lease shall remain the same in full force and effect.

IN WITNESS WHEREOF, the Parties hereto have caused this Third Amendment to be executed as of the day and year written below.

LANDLORD:

The Frank C. Ramos and Joanne M. Ramos Family Trust, dated September 22, 2005

By: /s/ Frank C. Ramos
Frank C. Ramos, Trustee

By: /s/ Joanne M. Ramos
Joanne M. Ramos, Trustee

Buzz Oates LLC, a California limited liability company

By: Oates Advisors LLC, a California limited liability company, Manager

By: /s/ Larry E. Allbaugh
Larry E. Allbaugh, Manager

Dated: May 24, 2012

TENANT:

Arcadia Biosciences, Inc., an Arizona corporation

By: /s/ Eric J. Rey
Eric J. Rey, President & CEO

Dated: May 15, 2012

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

[USAID FROM THE AMERICAN PEOPLE LOGO]

September 30, 2008

Mr. Eric J. Rey, President and CEO
Arcadia Biosciences, Inc.
202 Cousteau Place, Suite 105
Davis, CA 95618

Subject: Cooperative Agreement No. AEG-A-00-08-00009-00

Dear Mr. Rey:

Pursuant to the authority contained in the Foreign Assistance Act of 1961, as amended, the U.S. Agency for International Development (USAID) hereby awards to Arcadia Biosciences, Inc., hereinafter referred to as the "Recipient", the sum of $3,631,056.00 to provide support for a program "Abiotic stress tolerant rice and wheat for India" as described in the Schedule of this award and in Attachment B, entitled "Program Description."

This Cooperative Agreement is effective and obligation is made as of the date of this letter and shall apply to expenditures made by the Recipient in furtherance of program objectives during the period beginning with the effective date 9/30/2008 and ending 9/29/2011. USAID will not be liable for reimbursing the Recipient for any costs in excess of the obligated amount.

This Cooperative Agreement is made to the Recipient on condition that the funds will be administered in accordance with the terms and conditions as set forth in Attachment A (the Schedule), Attachment B (the Program Description), and Attachment C (the Standard Provisions), all of which have been agreed to by your organization.

Please sign the original and all enclosed copies of this letter to acknowledge your receipt of the Cooperative Agreement, and return the original and all but one copy to the Agreement Officer.

Sincerely yours,

/s/ Kenneth E. Stein
Kenneth E. Stein
Agreement Officer

Attachments:
A. Schedule
B. Program Description
C. Standard Provisions

ACKNOWLEDGED:

BY: /s/
TITLE:
DATE:

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

A. GENERAL

1.	Amount Obligated this Action:	$2,162,023.00
2.	Total Estimated USAID Amount:	$3,631,056.00
3.	Total Obligated USAID Amount:	$2,162,023.00
4.	Cost-Sharing Amount (Non-Federal):	$18,593,366.00
5.	Activity Title:	ESP/Arcadia/Rice and Wheat
6.	USAID Technical Office:	EGAT/ESP
7.	Tax I.D. Number:	81-0571538
8.	DUNS No.:	135964760
9.	LOC Number:	N/A
10.	NMS Number:	2100/376

B. SPECIFIC

Commitment Doc Type: PR
Commitment Nbr.: EGAT/ESP/IRBI(BIO)-0376
Line number: 1
BBFY: 2007
EBFY: 2008
Fund: DV
Operating Unit: EGAT/ESP
Strategic Objective: A18
Distribution: 936-4235
Management: A074
BGA: 997
SOC: 4100202
Amount: $2,162,023.00

C. PAYMENT OFFICE

USAID
Office of the Chief Financial Officer
M/CFO/CMP, RRB 7th floor
1300 Pennsylvania Ave, NW
Washington, DC 20523

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

TABLE OF CONTENTS

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

Attachment A

SCHEDULE

A.1 PURPOSE OF COOPERATIVE AGREEMENT

The purpose of this Cooperative Agreement is to provide support for Arcadia Biosciences, Inc.'s program "Abiotic stress tolerant rice and wheat for India."

A.2 PERIOD OF COOPERATIVE AGREEMENT

1. The effective date of this Cooperative Agreement is 9/30/2008. The estimated completion date of this Cooperative Agreement is 9/29/2011.

2. Funds obligated hereunder are available for program expenditures for the estimated period September 30, 2008 to September 30, 2010, subject to approval of performance through September 30, 2009 (See A.3.4 below).

A.3 AMOUNT OF COOPERATIVE AGREEMENT AND PAYMENT

1. The total estimated amount of this Cooperative Agreement for the period shown in A.2 above is $3,631,056.00.

2. USAID hereby obligates the amount of $2,162,023.00 for program expenditures during the period set forth in A.2 above and as shown in the Budget below. The Recipient will be given written notice by the Agreement Officer if additional funds will be added. USAID is not obligated to reimburse the Recipient for the expenditure of amounts in excess of the total obligated amount.

3. Payment will be made to the Recipient by Letter of Credit in accordance with procedures set forth in 22 CFR 226.22.

4. Incremental funds up to the total amount of the Agreement shown in A.3.1 above may be obligated by USAID subject to the availability of funds, satisfactory progress of the program, and continued relevance to USAID program objectives.

A.4 COOPERATIVE AGREEMENT BUDGET

The following is the Agreement Budget. Revisions to this budget shall be made in accordance with 22 CFR 226. Each amount listed below is considered a ceiling amount for that particular Agreement Year:

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

Budget
9/30/2008-9/29/2011

Year 1			Year 2			Year 3		
Construction	$	0	Construction	$	0	Construction	$	0
Contractual	$	407,569	Contractual	$	618,468	Contractual	$	601,747
Indirect Costs	$	201,986	Indirect Costs	$	307,697	Indirect Costs	$	247,443
All other Costs	$	390,445	All other Costs	$	484,090	All other Costs	$	369,320
Total	**$**	**1,000,000**	**Total**	**$**	**1,410,255**	**Total**	**$**	**1,218,510**

A. 5 REPORTING AND EVALUATION

1. **Financial Reporting**

In accordance with 22 CFR 226.52, the SF 269 and SF 272 will be required on a quarterly basis. The recipient shall submit these forms in the following manner:

a) The SF 272 and 272a (if necessary) must be submitted via electronic format to the U.S. Department of Health and Human Services (http://www.dpm.psc.gov). A copy of this form shall also be submitted at the same time to the Cognizant Technical Officer (CTO).
b) The SF 269 or 269a (as appropriate) shall be submitted to the CTO.
c) In accordance with 22 CFR 226.70-72, the original and two copies of all final financial reports shall be submitted to M/CFO and the CTO. The electronic version of the final SF 272 or 272a shall be submitted to HHS in accordance with paragraph (1) above.

2. **Program Reporting**

a) Detailed Implementation Plan (DIP):
The recipient shall follow the Evaluation Plan content and the schedule presented in the approved Detailed Implementation Plan (DIP), which shall be incorporated annually in the agreement by modification upon approval by the Cognizant Technical Officer (CTO).

b) Mid-term evaluations:
The Recipient shall submit within 30 days after the project year (by October 31) the original report and one copy to the USAID CTO, and one copy to the USAID Development Experience Clearinghouse, 8403 Colesville Road, Suite 210, Silver Spring, MD 20910, USA (or email: docsubmit@dec.cdie.org)

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

c) Annual Report:
The format, content and time schedule of the Annual Report shall be submitted in a format and on a time schedule agreed to between the CTO and the recipient. Annual Reports are not required for those years when mid-term or final evaluations are submitted. The Annual Report shall contain the information as set forth in 22 CFR 226.51(d). The recipient shall submit an original and one copy of a performance report to the CTO. The performance reports are required to be submitted annually to the CTO within 90 days after the end of each project year.

d) Final Evaluation:
The final performance evaluation shall briefly contain information set forth in 22 CFR 226.51(d). The Recipient shall submit within 90 days after the expiration or termination of the award, the original and one copy of the final evaluation, to the USAID CTO, the Agreement Officer, and one copy to the USAID Development Experience Clearinghouse, 8403 Colesville Road, Suite 210, Silver Spring, MD 20910, USA (or email: docsubmit@dec.cdie.org).

A.6 INDIRECT COST RATE

Within 90 days from the Award, the recipient shall submit a formal Indirect Cost Rate Proposal to their cognizant U.S. Government agency. In section A.4 each year has a ceiling dollar amount for all indirect costs for the given year. Pending establishment of revised provisional or final indirect cost rates, allowable indirect costs shall be reimbursed on the basis of the following negotiated provisional or predetermined rates and the appropriate bases:

Description	Rate	Base	Type	Period
Overhead	52.5%	(1/)	(1/)	(1/)

(1/) Base of Application: Total Direct Costs
Type of Rate: Provisional
Period: until Amended

A.7 TITLE TO PROPERTY

Property Title will be vested with the Recipient.

A.8 AUTHORIZED GEOGRAPHIC CODE

The authorized geographic code for procurement of goods and services under this award is 000.

A.9 COST SHARING

The Recipient agrees to expend the cost share amount listed in the agreement on page 3. Guidance on Cost Sharing can be found in ADS 303.3.10 and 22 CFR 226.23.

A.10 SUBSTANTIAL INVOLVEMENT

Substantial involvement during the implementation of this Agreement shall be limited to approval of the elements listed below. The Agreement Officer may delegate the following approvals to the CTO, except for changes to the Program Description or the approved budget. Only the Agreement Officer may approve those changes, after review by the CTO.

a) Approval of the Detailed Implementation Plan (DIP), submitted to USAID/EGAT/ESP, and any subsequent revisions. EGAT/ESP staff and technical specialists will review the DIP and meet with the recipient to discuss strengths and weaknesses. The DIP will provide a plan for the program, including plans for baseline and final surveys and collection of required indicators. Substantial changes resulting in any revisions to specific activities, locations, beneficiary population, international training costs, international travel, indirect cost elements, or the procurement plan may require a formal modification to the Agreement by the Agreement Officer. The approved DIP will supplement the initial Program Description in the Agreement and form part of the official documentation.

b) Approval of key personnel to include the following positions:

Project Director	**Vic Knauf, (Arcadia Biosciences)**
Project Director	**Usha Zehr, (Mahyco)**

c) USAID involvement in monitoring progress toward the achievement of program objectives during the performance of this Agreement, include written guidelines for the contents of annual reports, and mid-term and final evaluations in accordance with 22 CFR 226.51.

d) Agency and Recipient Collaboration or Joint Participation.

1. Collaborative involvement in selection of advisory committee members. (If the program will establish an advisory committee that will provide advice to the recipient).

2. USAID concurrence on the substantive provisions of the subawards.

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

3. Approval of the recipient’s monitoring and evaluation plans.

4. Agency monitoring to permit specified kinds of direction or redirection because of interrelationships with other projects.

A.11 PROGRAM INCOME

The Recipient shall account for Program Income in accordance with 22 CFR 226.24. Program Income earned under this award shall be added to the project.

A.12 COUNTRY-BY-COUNTRY BREAKDOWN OF EXPENDITURES

Recipient shall list each country included in the program and the total amount expended for each country under the award for the reporting period in the “Remarks” block on the “Financial Status Report” SF 269 or SF 269A, or on a separate sheet of paper with the “Request for Advance or Reimbursement” SF 270.

-End of Schedule-

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

Attachment B

PROGRAM DESCRIPTION

Productivity of rice wheat systems in South Asia

Increasing the productivity and sustainability of rice and wheat systems in South Asia is critical for the poor inhabitants of the region and a high priority for the U.S. Agency for International Development. South Asia is home to almost 1.5 billion people, including over 30 percent of the world's malnourished people. Essentially all of the arable land is already under cultivation, therefore expansion in crop area is no longer possible and meeting future cereal demand will require higher rates of improvement in cereal yields. Declining agricultural productivity in South Asia would have far reaching consequences. The importance of rice and wheat yields for food security for producers and consumers alike, both rural and urban, cannot be overstated, and with more than 70 percent of the population living in rural areas, increases in agricultural productivity would have a large impact on livelihoods of the poor.

USAID intends to support a range of interventions to increase farmer incomes and make agricultural systems more productive and resilient to climate change and to reduce their environmental impact. These interventions include the dissemination of resource conservation technologies, the deployment of new rice and wheat varieties bred with advanced molecular techniques, and the harnessing of public private partnerships to develop and deliver abiotic stress tolerant transgenic varieties.

Abiotic stress and climate change

Abiotic stresses such as drought, salinity, heat or soil nutrient deficiencies are a constraint to rice and wheat production in South Asia. The region is also significantly impacted by climate variability even though some areas have a relatively high level of irrigation. Under most projected climate change scenarios for South Asia, heat stress and water availability will emerge as major constraints, with floods and drought both increasing in frequency and severity. The introduction of crops with enhanced tolerance to abiotic stresses will be an important strategy to increasing agricultural productivity, and hence farmer livelihoods and regional food security, under these anticipated impacts of climate change.

Additionally, many farmers do not have access to affordable nitrogen fertilizers. Where nitrogen fertilizers are used, much of the applied nitrogen is lost to the environment, contributing to greenhouse gases and aquatic pollution. Rice and wheat varieties with enhanced nitrogen use efficiency would allow farmers to obtain greater yields and reduce input costs while reducing water pollution and greenhouse gas emissions through more efficient fertilizer use.

Public-private partnerships to develop biotech crop solutions

The private sector can play an important role in improving cereal productivity for South Asia; it has developed promising technologies and has expertise in product development and delivery. However at the present time, the large number of poor farmers, high cost of cultivar development, and uncertainty over regulatory frameworks, market acceptance and product stewardship argue for effective public-private partnerships so that increases in yield occur concurrently with the development of a robust commercial sector to address the needs of the poor. Partnerships with the public sector can increase the chance of success by helping to allay financial and management risks of the companies involved, and by promoting broader distribution and increased market access for the technology. The public sector can additionally provide funding for the development of improved seed for those farmers who lack adequate resources to participate in developing markets. Public sector investments ensure that biotechnology products reach disadvantaged and smallholder farmers sooner. USAID takes a broad view of the role of the public sector in increasing access to biotechnology and envisions supporting interventions ranging from technology development to capacity building for enhanced product distribution and delivery.

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

USAID's agricultural biotechnology program

USAID views biotechnology as a valuable tool for increasing the productivity, environmental sustainability and economic viability of agricultural systems and works to provide access to these tools to scientists around the world. These tools can then be used to provide improved crop varieties to smallholder farmers. USAID has implemented projects to develop new crop varieties using the tools of biotechnology and has assisted in developing associated biosafety frameworks in many countries since the early 1990s. Working through innovative partnerships involving partner country governments and US and partner country public sector research institutions, universities, private firms and foundations, USAID intends to maximize local ownership and support of technology development projects. USAID's biotechnology program supports crop improvement at all stages of the pipeline from laboratory research to field trials to commercialization and delivery of technology, thereby ensuring that research investments lead to new crops in farmers' fields. Parallel investments in partner countries assist in building effective regulatory systems to ensure that appropriate safety measures are taken while moving bioengineered crops through the development process. Assistance is also provided to build public sector capacity to access and manage proprietary technologies.

Biotech crop development in South Asia

India will be the initial partner country for development and deployment of new biotech rice and wheat varieties. India currently has the most advanced biosafety regulatory system in South Asia and leads the region in the adoption of biotech crop varieties. India also has a growing level of public and private biotechnology investment and a high level of technical and institutional capacity among potential partners, both public and private. As program goals are achieved in India, it is expected that there will be important spillover benefits to South Asian countries as well as to other developing countries with similar abiotic constraints on agricultural productivity. Technologies with demonstrated potential in India can, for example, be extended to Bangladesh and Pakistan at reduced cost and effort.

Program Description

Program Goals and Objectives

This Annual Program Statement (APS) outlines the intent to establish public-partnerships to evaluate, develop, and/or broaden deployment of transgenic technologies conferring tolerance to abiotic stresses such as drought, salinity, heat and for improving nitrogen use efficiency in rice and wheat. Through this APS, USAID will facilitate the evaluation of selected technologies under field conditions in India, the most promising of which may be selected for further development and delivery to Indian farmers, and, eventually South Asian farmers. Private-sector firms are especially encouraged to apply, though all technology developers will be considered, including public and private universities and research institutions. This project will focus on advanced stages of the product development process, beginning with the evaluation of a range of promising trait-crop combinations in field trials under local conditions and continuing with the development of a regulatory package and deployment strategy for selected technologies.

For each technology selected, USAID intends to support partnerships that may include any combination of the technology provider, an Indian public sector institution and/or an Indian private sector partner. Through this APS USAID will provide initial grants to technology providers and their partners for the purpose of evaluating selected technologies under field conditions in India, and where results are sufficiently promising, develop a plan to commercialize the technology. After a period of 2-3 years, USAID expects to select several of these technologies for further field testing, product development, biosafety data package assembly and eventual delivery of improved varieties to farmers. Technology providers may build on existing collaborations and establish partnerships themselves or request USAID assistance in identifying appropriate public and/or private partners in India. Future support for this program is subject to the availability of funding, and USAID may choose to support all, some or none of the selected technologies in future funding cycles through other mechanisms.

In addition to providing grants, USAID may leverage additional contributions, both financial and in-kind, from other donors. USAID may provide assistance, if needed, in selecting partners and/or developing a commercialization strategy for each technology. USAID may also provide assistance, if needed, with

meeting biosafety requirements in India by mobilizing resources through related USAID programs. Grant recipients and their partners, however, will ultimately be responsible for obtaining all required permits related to the transport, importation, environmental release and commercialization of transgenic materials. Grantees may also provide additional resources in the form of equipment, facilities, and technical expertise.

Technologies

Eligible technologies will be those that use bioengineering (transgenic, biotech) methods to confer abiotic stress tolerance to rice and wheat. Targeted traits include drought tolerance, salinity tolerance, heat tolerance, and nitrogen use efficiency. Strong preference will be given to technologies that have been field tested in a monocot crop plant; demonstrated effectiveness in rice and/or wheat would be desirable.

USAID is particularly interested in technologies that address projected climate change scenarios, such as reduced grain yield due to higher temperatures and variable or reduced water supply. Technologies that reduce the environmental impact of agriculture, such as by limiting greenhouse gas emissions, fertilizer applications or energy inputs, or that reduce farmer risk, by increasing crop resilience, are also of significant interest. This APS will not support evaluation or development of traits that do not directly confer abiotic stress tolerance, such as pest or disease resistance, nutritional enhancement or herbicide tolerance, except as additional stacked traits.

Technical Application

The Recipient's Technical Application Submission entitled "Development and Commercialization of Nitrogen Use Efficient, Salt-Tolerant and Drought-Tolerant Rice and Wheat for India," dated 9/24/08 and submitted in response to APS M-OAA—EGAT-08-1108, is hereby incorporated as attachment (B-1). Further, the Branding Strategy, and Marking Plan will be incorporated as Attachment B-2 to this award within 45 days of award per provision 14 (c)(2).

Attachment B-1

Technical Proposal dated 9/24/08

Cover Page

Full Proposal

Development and Commercialization of Nitrogen Use Efficient, Salt-Tolerant and Drought-Tolerant Rice and Wheat for India

USAID's Office of Environment and Science Policy
Annual Program Statement on
Abiotic Stress Tolerant Bioengineered Rice and Wheat

APS Number: M-OAA-EGAT-08-1108

Applicant Information

Name and Address of Organization	Arcadia Biosciences, Inc.

	202 Cousteau Place, Suite 105 Davis, CA 95618
Type of Organization	For-profit
Contact Point	Dr. Vic Knauf Chief Scientific Officer Telephone: 530-756-7077 Fax: 530-756-7027 Email: vic.knauf@arcadiabio.com
Names of other organizations applied to and/or funding the proposed activity	None
Signature of Authorized Representative	/s/ Eric J. Rey Eric J. Rey President and CEO

This application includes data that shall not be disclosed outside the U.S. Government and shall not be duplicated, used, or disclosed — in whole or in part — for any purpose other than to evaluate this application. If, however, a cooperative agreement is awarded to this applicant as a result of, or in connection with, the submission of this data, the U.S. Government shall have the right to duplicate, use, or disclose the data to the extent provided in the resulting cooperative agreement. This restriction does not limit the U.S. Government's right to use information contained in this data if it is obtained from another source without restriction. The data subject to this restriction are contained.

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

Executive Summary

Drought, salinity, and low nitrogen fertilizer inputs present significant hurdles to agricultural productivity in India. Arcadia Biosciences, Inc. (Arcadia) has demonstrated and is further developing technologies for nitrogen use efficiency, salt-tolerance, and drought-tolerance in crops in the field. Arcadia and Maharashtra Hybrid Seeds Company Ltd. (Mahyco), a leading developer and seller of crop seeds in India, have an existing agreement to co-develop nitrogen use efficient rice & wheat varieties and, separately, salt-tolerant rice and wheat varieties for India. Arcadia, in cooperation with Mahyco, seeks funding from USAID to develop and commercialize rice and wheat plants incorporating all three traits (nitrogen efficiency, salt-tolerance, and drought tolerance) in Indian rice and wheat varieties.

Program Description

A three year major program is proposed here as an active and committed effort by grant applicant Arcadia and Indian commercial partner Mahyco. Arcadia and Mahyco will meet with representatives of the USAID sponsoring program at the outset to define priorities for targeted growing areas within India; priorities for traits and varietal types of rice and wheat; and to plan and lay out the steps to achieve regulatory approvals and grower acceptance of novel technologies. Arcadia and Mahyco will regularly report progress to the USAID and will host scheduled meetings, lab visits, and field trips on a regular basis to keep the USAID fully up to date.

Gene constructs, appropriate specific methodology associated with the target traits, the NUE wheat event, conduct of the greenhouse gas impact studies, and an active role in reviewing findings at each step will be directly provided by Arcadia. Mahyco will undertake the wheat (other than NUE wheat) and rice transformation work and all transgenic field trials in India as a subcontractor to Arcadia. The partners will work together closely to maximize progress.

As the sole Indian licensee of the Arcadia technology described here, Mahyco will determine the commercialization paths of varieties developed under the auspices of this research program. The program will significantly reduce risk and the time to develop technology and products that are needed now.

Goals and Objectives

The goals are to develop and test high yielding varieties of rice and wheat specifically adapted to agriculture in India that contain introduced genes conferring significantly increased nitrogen use efficiency (NUE), water use efficiency (WUE), tolerance to short periods of drought (DT), and salinity tolerance (ST). These lines of rice and wheat should be constructed such that regulatory approvals by the Indian government will be straightforward. In each case, the yield demonstrated in the field at multiple locations under limiting conditions of nitrogen, water, or water quality shall be at least ten per cent higher than the corresponding control variety lacking the introduced gene. The ultimate goal is to commercialize planting seed to be available broadly to Indian farmers.

The objectives of the three year program are to have by the end of 2011:

1. Two years of field trial data from multiple locations in India for lines of indica rice with enhanced NUE and ST;
2. Breeding and variety development well underway and targeted for all key rice and wheat growing areas where the technology will make a significant impact;
3. Initial field trial evaluation data in hand for rice containing all three technologies combined;
4. Initial field trial results for NUE wheat lines and for ST wheat lines;
5. T2 generation seed in hand for DT wheat;
6. T1 generation seed in hand for wheat with all three technologies combined.

Nitrogen Use Efficiency—Background

Nitrogen fertilizer enables farmers to achieve the high yields that drive modern agriculture and fertilizer use is increasing substantially as the global population and food requirements continue to grow. While nitrogen fertilizer is effective in driving crop yields, most crop plants absorb less than 50% of the nitrogen applied to the fields. Nitrogen fertilizer is manufactured from natural gas and as a result the current high prices for oil and gas are driving an increased cost of fertilizer for the farmer. In addition much of the unabsorbed nitrogen escapes into the air and waterways, thereby polluting the environment.

Agriculture is the second largest industry contributor to greenhouse gas (GHG) emissions that lead to Global

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

Warming (Figure 1). These agricultural emissions are largely driven by the use of nitrogen fertilizer, which naturally converts to nitrous oxide in the soil and is released into the air. Nitrous oxide is 300 times more powerful than carbon dioxide (C02) as a greenhouse gas; agriculture emits 84% of global nitrous oxide. Each metric ton of nitrogen applied as fertilizer to fields results in 6-15 metric tons of GHG emissions.

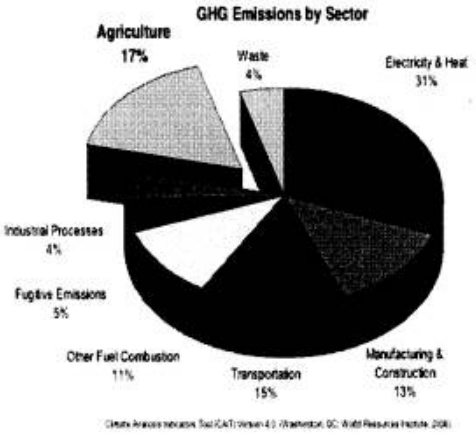


Figure 1. Greenhouse gas emissions by sector.

Nitrogen Use Efficiency—Technical Approach

Engineering of plants to be more nitrogen efficient would both increase farmer's productivity and decrease the environmental impact of nitrogen applications. The Nitrogen Use Efficiency (NUE) technology developed at Arcadia is based on modulating the expression of an aminotransferase gene. While the GS/GOGAT cycle is the major route of nitrogen (N) assimilation in plants, altering the expression of enzymes directly involved in this cycle has not led to reproducible, field-demonstrated NUE. Aminotransferases are integral to N assimilation for the production of amino acids and N allocation in plants. Alanine aminotransferase enzymes catalyze the reversible formation of alanine and 2-oxoglutarate from glutamate and pyruvate. Increased NUE in transgenic plants expressing an alanine aminotransferase (AlaAT) from *Hordeum vulgare* under the control of a stress-inducible promoter from the *Brassica napus* turgor-responsive gene (btg26) was first demonstrated in canola (Good et al., 2007).

Arcadia's NUE technology enables plants to absorb and utilize nitrogen fertilizer much more efficiently than their non-transgenic controls. This results in the same high yields as conventional crops while using half as much nitrogen fertilizer, or higher yields if using the same amount of fertilizer. In either case, less nitrogen escapes into the water and air. Arcadia has granted licenses to multiple commercial seed companies for development and commercialization of this technology in crops, including: Monsanto (canola), DuPont/Pioneer (corn), Scott's Company (turf), SES Vanderhave Seeds (sugar beets), Mahyco (multiple crops), and CSIRO/ACPFG (wheat and barley).

Nitrogen Use Efficiency Technology—Efficacy Data in Canola

Canola expressing btg-AlaAT has been extensively field tested for NUE by Arcadia since 2002. This work has progressed over 7 field seasons in the Imperial Valley of California and throughout the upper Midwestern United States. Typical results from application of urea fertilizer are shown in Figure 2A. Both the transgenic line and control plants respond to the application of **N. Similar seed yields were achieved in the transgenic line using 66% less nitrogen than the control, Westar. In addition, seed yield was increased in the transgenic line by as much as 33% over the control at conventionally applied nitrogen levels.**

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

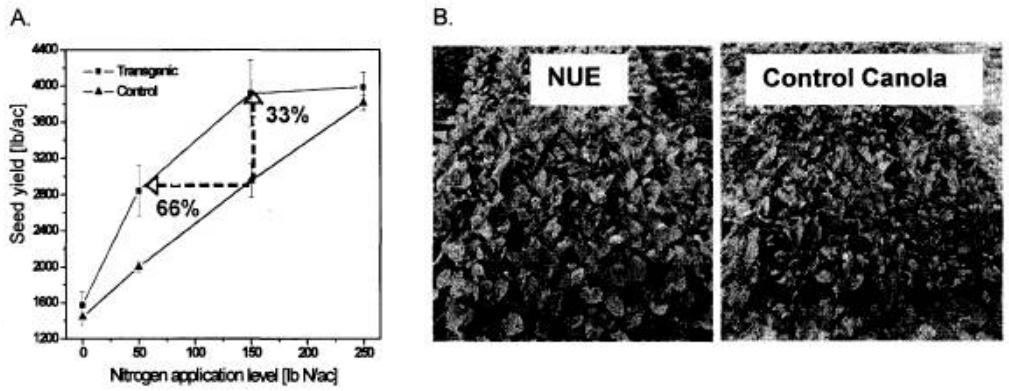


Figure 2. Seed yield of field grown NUE canola (A) and biomass accumulation (B).

The transgenic plants accumulated significantly more biomass before bolting (Figure 2B) and the primary increase was in shoot biomass (data not shown). Extensive analyses on btg-AlaAT transgenic canola plants and seeds did not show any significant compositional differences at maturity. The plants showed no differences in nitrogen, phosphorus or potassium content. In addition, the seeds contained no differences in moisture content, size, protein content, amino acid composition, oil percentage or fatty acid composition.

In addition to field studies, a greenhouse test system for biomass accumulation in the NUE transgenic plants has been established. The system is used to study the time course of biomass accumulation, the molecular and biochemical basis for the accumulation and for preliminary screening of new transgenic events.

Nitrogen Use Efficiency Technology—Efficacy Data in Rice

In addition to demonstrated field success in canola, Arcadia has promising NUE results in several varieties of japonica rice. In these experiments AlaAT is expressed under the control of the rice homologue of the btg related promoter OsAnt1. Both greenhouse and preliminary field trial results from Brawley, CA have shown increases in seed yield, panicle number and biomass in the transgenic lines as compared to controls under various nitrogen treatments. Figure 3A shows the grain yield differences of the transgenic lines (N4-13 and N4-15) as compared to the Nipponbare control under different applied nitrogen rates. Figure 3B shows that the increase seed yield is due to an increase in panicle number. These data are consistent with early generation data on these plants published recently by Shrawat et al (2008).

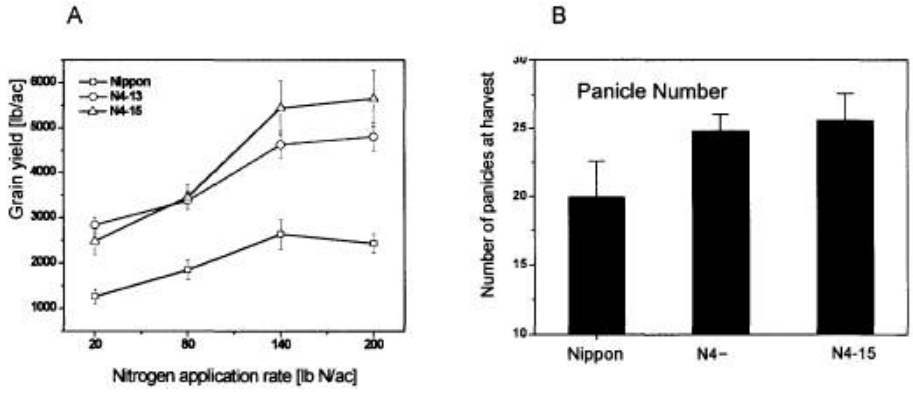


Figure 3. Transgenic rice lines outperform the parental variety control (Nipponbare).

Our field results, though promising, come from a nontypical rice growing region (too hot and too dry). The OsAnt1-AlaAT rice plants are currently being tested a replicated field trial that was planted on May 22, 2008 in Fresno, CA (a rice growing region). In addition to regulations imposed by the USDA, this trial is being conducted under additional regulations set by the California Rice Commission. Multiple lines from five events

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

of the variety Nipponbare and 2 events of the variety Taipei are included along with the parental varieties and null sibling controls. The plants are being grown under four different nitrogen regimes and will be scored for tiller number, shoot biomass, panicle number and grain yield. Results from this field trial are expected in November 2008.

Salt Tolerance, Drought Tolerance and Water Use Efficiency Technologies—Background

Approximately 234 million hectares of irrigated cropland provides about 40 percent of the world's food supply. Approximately 25-30% of this area is impacted by salinity, and continued irrigation leads inexorably to increasing salinization (Figure 4). These lands are either in production with suboptimal yields, or they have been taken out of production entirely. The cost of yield losses associated with salinity is estimated to be in excess on $20 billion annually. Rice is an especially salt-sensitive crop, with yield losses of 25% on water with $E.C._w$ of about 4.6 (Grattan et al, 2002). However, accumulation of salts in the soil has a much stronger impact on yield, with 50% yield losses seen with $E.C._e$ of 3.6 approaching 50% (Maas, 1986). In India, 7MHa of irrigated land (17% of the total irrigated land) is salt-affected (Ghassemi et al, 1995), but 21MHa of all land, including rain fed land is salt affected (FAO TERRASTAT).

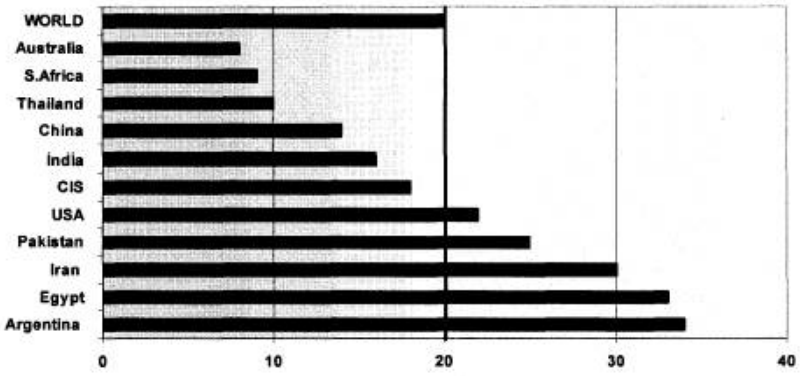


Figure 4. Percent of Agricultural Land that is Saline

Modern agriculture is also highly water intensive, using approximately 80 percent of world water withdrawals. The UNESCO World Water Assessment Program forecasts a 40 percent increase in global freshwater demand and a corresponding 35 percent decrease in per capita supply by the year 2025. In India, sources of irrigation water are being increasingly used for industrial and urban sectors. Water scarcity, drought stresses, and declining irrigation combine to reduce yields and increase the risk of production. This becomes a challenge to resource-poor farmers who may not then invest in the infrastructure and technologies needed to bring cultural practices to a level of sophistication required to mitigate the poor water supply (Rosegrant et al., 2008). While the monsoon provides ample water to sustain soil moisture in the northeast and southwest, more than two thirds of cropped lands are vulnerable to droughts of different magnitude and duration as a result of variability in monsoon onset, withdrawal, and interruption (Prabhakar and Shaw, 2008). The ability to productively manage crops in saline environments and reduce reliance on fresh water is critical for food security and water availability. Equally important is the need to provide crops that can reduce the risk of water availability while maintaining or improving yields.

Salt Tolerance Technology—Technical Approach

Arcadia's salinity-tolerance technology is based on the overexpression of plant vacuolar Na^+/H^+ antiporter(s) (NHXs) (Apse et al., 1999, Zhang and Blumwald, 2001). Vacuolar NHXs catalyze the electroneutral exchange of cytoplasmic sodium (and potassium) with vacuolar protons. NHX overexpression promotes the sequestering of sodium ions into the vacuoles of the cells, where it is not toxic and contributes favorably to the osmotic balance of the cells and plant tissues. This strategy, which is based on the characteristic high activity of vacuolar NHX activity observed in salt tolerant halophytes, promotes the tolerance of shoot tissues to sodium. There is also evidence that the overexpression of NHX in roots promotes K^+ homeostasis under saline conditions (see below). It permits the growth and production of seed under salinity stress levels that would otherwise have a negative impact on yield. The technology is applicable to a wide range of crops,

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

including corn, rice, soybeans, wheat, and vegetables. Arcadia's salt-tolerance technology can improve farming efficiencies and reduce the need to expand agricultural activities into new areas. In addition, this technology can reduce the need for fresh water by allowing increased use of lower quality (brackish) water.

Salt Tolerance Technology—Efficacy Data in Rice and Wheat

Arcadia's salinity tolerance technology has been demonstrated in multiple model and agricultural crops, including Arabidopsis, tomato, canola, wheat, cotton and rice. The technology has been validated by many academic researchers (Fukuda et al., 2004, Verma et al., 2007, and references therein). Arcadia is testing two transgenic rice events in field tests in California (planted May 22, 2008), and 12 lines which are in greenhouse tests. The lines currently being field tested performed very well in greenhouse trials. **On chronic exposure to high salinity stress ($E.C._w$=6.7), independent transgenic rice lines over-expressing AtNHX1 (G5 and G6) retained 40% of their yield, while the controls (Null and WT) retained only 20% (Figure 5).** While the salinity treatments in the greenhouse experiments are much higher than those of agronomic relevance, the 2008 field trials will impose two stress levels ($E.C._w$=3.1 and 5.6) that typically lead to yield losses of 25% and 50% respectively in rice. Parallel experiments that implement these more moderate stress treatments are being performed in the greenhouse this year.

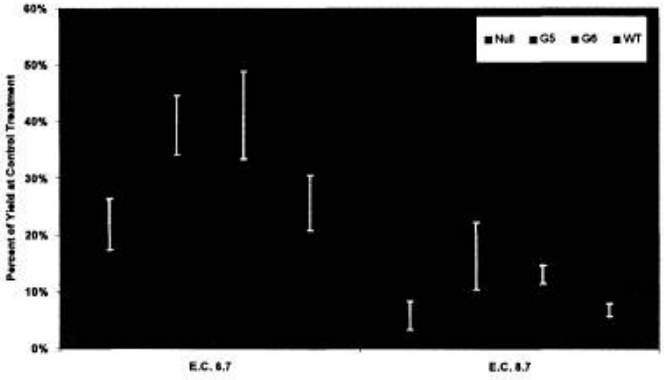


Figure 5. Relative yields of transgenic (NHX) and control rice lines in greenhouse.

Arcadia and Mahyco seek to test and develop the NHX technology in wheat. There are some encouraging results in wheat reported by Xue et al. (2004) using NHX overexpression in wheat in laboratory and field tests. Transgenic wheat, expressing AtNHX1 under the control of a 35S CaMV promoter, showed a much smaller reduction in grain yield under very high salinity (soil E.C.=10.6 dS m^{-1}). Root ion homeostasis was improved in the transgenic wheat lines, as they retained

more potassium under saline treatment (Xue et al., 2004). The retention of potassium in the roots is consistent with the transport properties of AtNHX1 (and other vacuolar NHX antiporters). This antiporter has selectivity for potassium that is up to twice that of sodium (Yamaguchi et al., 2003). A high level of expression in the roots would promote potassium accumulation in the vacuoles of root cells. Moreover, the ability to maintain potassium concentrations in the root has been correlated to salinity tolerance in wheat (Cuin et al., 2008).

Drought Tolerance and Water Use Efficiency Technology—Technical Approach

The technology being developed at Arcadia to address water deficit stress is based on the production of cytokinins under stress conditions. This approach has been shown in tobacco to be effective at preserving yields under chronic deficit irrigation and at mitigating yield loss under extended periods of soil drying. The transgenic construct (pSARK-IPT) contains a maturation-induced promoter (SARK) that controls the expression of isopentenyltransferase (IPT), which is the rate-limiting enzyme in cytokinin biosynthesis. Plants typically respond to water stress by reducing transpiration. Initially this will induce stomatal closing. Senescence and abscission of leaves for the recovery of nitrogen and photoassimilates and the reduction of canopy size are typical adaptive responses which allow plants to set seed under prolonged or severe stress. However, the yield is greatly reduced. In crop plants, a severe yield reduction is considered crop failure.

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

Better control over senescence initiation provides protection against yield losses in pSARK-IPT transgenic plants subjected to limiting water conditions.

Drought Tolerance Technology—Efficacy Data in Tobacco

This technology has been successfully tested in tobacco, both in greenhouse (Rivero et al., 2007) and under field conditions. Rivero et al. (2007) reported that the pSARK-IPT transgenic tobacco recovered from extreme drought (Figure 6). **Biomass and seed yields from wild type plants were dramatically reduced (due to senescence and leaf death), while the transgenic plants recovered from wilting and continued to complete their life cycle with good seed yields.**

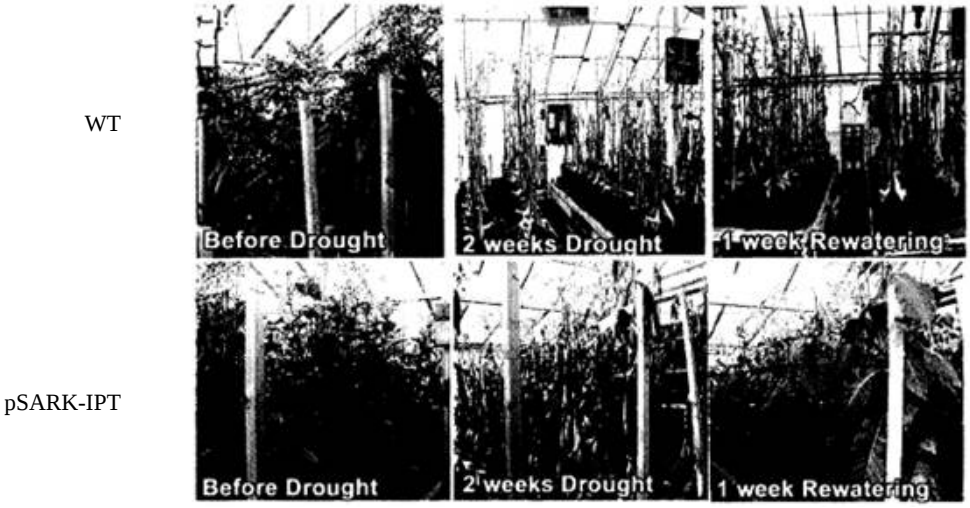


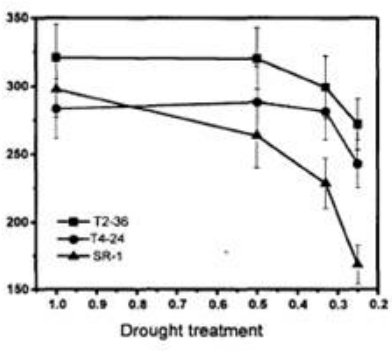
Figure 6. Recovery from soil drying in pSARK-IPT transgenic tobacco and wild type control plants.

In separate experiments in which plants were watered regularly but at reduced rates, the transgenic pSARK-IPT lines lost only 10% in biomass and seed yield, while the wild type controls suffered a 60% loss. The response of the transgenic tobacco to these greenhouse treatments suggests that the technology is appropriate for addressing crop performance during either short term drought, which can lead to crop failure, or prolonged water stresses which reduce yields dramatically in the non-transgenic control. Under conditions of chronic deficit irrigation in the greenhouse, transgenic tobacco plants continued to show little reduction in rates of photosynthetic carbon assimilation, while untransformed controls showed a reduction of up to 50% (Blumwald, unpublished).

Use or disclosure of data contained on this sheet is subject to the restriction on the title page of this application

Preliminary data from testing in the field, although under conditions of heat stress in addition to prolonged water deficit stress, are consistent with the results from greenhouse testing. Under reduced watering, the pSARK-IPT transgenic lines (T2-36 and T4-24) produced greater biomass (Figure 7A) and seed yield, estimated from capsule numbers (Figure 7B). No yield penalty was observed under control treatments.

A. Biomass weight [FW, g/plant]



B. Capsule number per plant

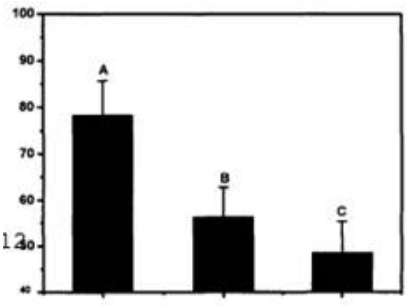


Figure 7. Field biomass and seed yield of pSARK-IPT tobacco and control (SR-1) line.

Drought Tolerance and Water Use Efficiency Technology—Application to Rice and Wheat

The transformation of both indica and japonica rice with pSARK-IPT at Arcadia, to test the efficacy of this technology in monocots, is underway. Since the trait is untested in monocots, there are two significant questions that need to be resolved. First, does cytokinin production in monocots inappropriately inhibit the rapid remobilization of nitrogen and photoassimilates from leaves and stems to the grain? Second, is the pSARK promoter, isolated from pea, appropriately activated in response to stress and senescence stimuli in monocots? We expect data in a monocot in 2008 (in experimental transgenic lines of japonica rice) that will determine if cytokinins can be produced in monocots under the control of a pea senescence-sensitive promoter without yield penalty. Arcadia is currently funding a four-year research program at the University of California at Davis to further study and optimize this drought tolerance trait in both dicotyledonous and monocotyledonous crops.

Combined Technologies—Description

Rice and wheat crops are often affected by different abiotic stresses during a single growing season. Therefore, combining NUE and drought and salinity tolerance technologies into a single construct is technically and strategically advantageous even without considering the potential synergies between the technologies. NUE promotes more vigorous growth and yield, which in itself is a positive effect on absolute yields under abiotic stress. Vigor in the absence of stress is a selected trait in breeding for yields under stress. Early vigorous growth in NUE plants will improve yields in the face of salinity and/or water deficit stresses that may occur over the growing season. Ion homeostasis in NHX transgenics is biochemically less expensive than the increased synthesis of compatible solutes alone (which consume valuable nitrogen and photoassimilates). This less expensive osmotic adjustment in NHX transgenic plants should promote shorter periods of stomatal closing and therefore improve water (and nutrient) acquisition. Arcadia's drought tolerance technology, while untested in monocots, holds great promise because of its potential contribution not only to drought tolerance, but to tolerance of other stresses that might promote early senescence and the consequent loss of yield. Such stresses include salinity, heat, and other abiotic stresses that induce oxidative damage. Like NHX transgenics, pSARK-IPT transgenic plants show some evidence for improved yield even under "control" treatments. The combination of all these traits into a single construct should speed the production of wheat and rice lines carrying all three traits.

Use or disclosure of data contained on this sheet is subject to the restriction on the title page of this application

However, synergies are expected between the NUE and abiotic stress tolerance technologies. While over expression of NHX promotes ion homeostasis, the dramatic upregulation of antioxidant enzyme activities and the dramatically reduced redox state of the antioxidant pools pSARK-IPT plants suggest that the combined NHX/pSARK-IPT plants will be better equipped to handle oxidative stress. For example, as soil moisture decreases during a dry episode, or if soil moisture is chronically reduced over a season because of water scarcity, the plants will face salinity stress (higher concentration of dissolved solutes in the soil) and water deficit stress, as well as temperature stress. As stomatal apertures decrease, transpirational cooling capacity is reduced. Here, a combination of NHX and pSARK-IPT technologies is complementary.

The pSARK-IPT technology may have a very dramatic effect on NUE, even in transgenic NUE plants. The pSARK-IPT plants promote a stay-green phenotype in tobacco. Stay-green phenotypes in sorghum and maize retain photosynthetic competence late in the season as well as under conditions of water deficit stress; this translates into superior yields (Thomas and Howarth, 2000). The combination of improved nitrogen uptake in NUE transgenics with an extension of source leaf longevity in pSARK-IPT plants may predict even greater rice and wheat yields.

Because of the risks for the drought tolerance technology outlined above, we consider the possibility that pSARK-IPT will not be optimally expressed in wheat and/or rice. Proof of concept rice and wheat lines are currently being advanced and will be available for characterization of expression of IPT in the late summer and fall of 2008. Should the data suggest that the pSARK promoter is not appropriate for IPT expression in either rice or wheat, we anticipate modifying a combined construct to NHX plus NUE, rather than a combination of the three technologies, as planned. We would make this determination in review with USAID as soon as the data become available.

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

While Arcadia proposes here to combine NUE, salt tolerance and drought tolerance technologies into both rice and wheat, development and testing of each of these technologies (NUE and NHX) is already a commitment undertaken by Arcadia and its Indian commercial partner, Mahyco, the development of commercial lines containing all three traits within a single construct has the potential to speed deployment and consequent benefits in India. Testing of the combined traits will occur in parallel with the individual traits at field testing sites in India.

Expected Impact

Potential Economic Impacts of Arcadia Traits on Rice Production

India has over 46 million hectares of rice under cultivation and is the single largest rice producer in the world (China is a distant second at 29 million hectares). Rice is farmed throughout the subcontinent and is an essential staple in India's culture and economy. However, despite the importance of rice in Indian agriculture, India's average rice yields (1.69 tons/hectare) lag well behind those of other important rice growing regions such as China (3.54 tons/hectare), Indonesia (2.28 tons/hectare), Vietnam (2.47 tons/hectare) and Bangladesh (2.11 tons/hectare). India's low rice yields can be attributed to many factors, including poor soils and soil management, low levels of agricultural inputs (high-yielding varieties, water, fertilizer and chemicals), and poor agricultural practices. However, this also means that there is an opportunity for significant improvement before the maximum yield potential of Indian rice varieties is likely to be reached.

The introduction of abiotic stress tolerance traits like NUE, salt-tolerance, and drought-tolerance in rice is expected to have a positive impact on yields and significantly improve the economics of Indian growers. The impact will, of course, vary from region to region and will depend on many factors, but assuming a 10% yield increase in rice from salt-tolerance and drought-tolerance technologies, the range of value creation on the farm is expected to be between $16.73/hectare in low yielding regions such as Madhya Pradesh, and $100.43/hectare in high yielding regions such as Punjab. Similarly, assuming a 15% yield increase and 20% nitrogen cost savings from NUE technology, the range of value creation on the farm is expected to be between $31.11/hectare in Madhya Pradesh, and $144.04/hectare in Punjab (Table 1 below). If these technologies are implemented on 30% of India's rice acres, these traits could result in about $1.75 billion of added value on the farm annually.

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

Table 1. Potential Range of Economic Impacts of Arcadia Traits in Rice

	Yield Increase (MT/ha)(1)		Incremental Crop Value ($/ha)
Madhya Pradesh (avg. yield 0.62 MT/ha)			
· NUE	0.09	$	31.11
· Drought-tolerance	0.07	$	16.73(2)
· Salt-tolerance	0.07	$	16.73
Punjab (avg. yield 3.51 MT/ha)			
· NUE	0.53	$	144.04
· Drought-tolerance	0.42	$	100.43
· Salt-tolerance	0.42	$	100.43

Potential Economic Impacts of Arcadia Traits on Wheat Production

India has over 27 million hectares of wheat under cultivation and is the single largest wheat producer in the world (more than the annual planted acreage of the EU 25). Wheat is farmed throughout the subcontinent and is an essential staple in India's culture and economy. However, despite the importance of wheat in Indian agriculture, India's average wheat yields (2.74 tons/hectare) lag well behind those of other important wheat growing regions such as the EU 25 (5.51 tons/hectare) and China (4.36 tons/hectare). India's low wheat yields can be attributed to many factors, including poor soils and soil management, low levels of agricultural inputs (high-yielding varieties, water, fertilizer and chemicals), and poor agricultural practices. However, this also means that there is an opportunity for significant improvement before the maximum yield potential of Indian wheat varieties is likely to be reached.

The introduction of abiotic stress traits like NUE, salt-tolerance and drought-tolerance in wheat is expected to have a positive impact on yields and significantly improve the economics of Indian growers. The impact will of course vary from region to region and will depend on many factors, but assuming a 10% yield increase in wheat from salt-tolerance and drought-tolerance technologies, the range of value creation on the farm is expected to be between $33.57/hectare in low yielding regions such as Maharashtra, and $109.54/hectare in high yielding regions such as Punjab. Similarly, assuming a 15% yield increase and 20% nitrogen cost savings from NUE, the range of value creation on the farm is expected to be between $49.36/hectare in Maharashtra, and $135.20/hectare in Punjab (Table 2 below). If these technologies are implemented on 30% of India's wheat acres, these traits could result in about $1.25 billion of added value on the farm annually.

(1) Assumes a crop base price $239.14 per metric ton.
(2) Drought-tolerance and salt-tolerance economic values are based on 25% yield reduction due to abiotic stress and that the Arcadia technologies will result in a 15% yield recovery (effectively getting the crop to 90% of its yield potential).

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

Table 2. Potential Range of Economic Impacts of Arcadia Traits in Wheat

	Yield Increase (MT/ha)(3)		Incremental Crop Value ($/ha)
Maharashtra (avg. yield 1.29 MT/Ha)			
· NUE	0.19	$	49.36
· Drought-tolerance	0.15	$	33.57(4)
· Salt-tolerance	0.15	$	33.57
Punjab (avg. yield 4.20 MT/Ha)			
· NUE	0.63	$	135.20
· Drought-tolerance	0.47	$	109.54
· Salt-tolerance	0.47	$	109.54

Expected Environmental Impacts of Arcadia Traits

Field results from NUE technology in canola have been used to demonstrate the potential environmental benefits of this technology. A partial life-cycle assessment adapted to crop production was used to assess the potential environmental impacts of growing genetically-modified NUE canola in North Dakota and Minnesota (Strange et al., 2007). The study concluded that there are a number of potential environmental benefits associated with growing NUE canola. In order to obtain yields in NUE canola equivalent those with conventional canola, the use of the NUE technology results in one third less total energy consumption and one third less C02 emissions equivalents. Other benefits include reduced impacts on freshwater ecotoxicity, eutrophication, and acidification.

NUE technology in rice and wheat is expected to have multiple impacts on the environment. First, NUE in rice and wheat will increase the efficiency of production on existing rice and wheat acres and reduce the need to expand into additional and sometimes marginal acres (a significant issue in India). Second, NUE in rice and wheat will reduce the amount of "free" nitrogen in soils, thereby reducing the leaching potential into waterways and marine systems, as well as volatilization of harmful nitrous oxide from soils (a greenhouse gas 296 times more harmful than carbon dioxide). Salt-tolerant and drought-tolerant rice and wheat will also reduce the need for expansion into additional acreage, and at the same time reduce the need for fresh water, a critical and scarce resource in India.

(3) Assumes a crop base price $179.50 per metric ton.
(4) Drought-tolerance and salt-tolerance economic values are based on 25% yield reduction due to abiotic stress and that the Arcadia technologies will result in a 15% yield recovery (effectively getting the crop to 90% of its yield potential).

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

Proposed Product Development and Commercialization Approach

Arcadia and Mahyco believe that the critical need to maintain and improve crop yields under increasingly stressful environmental conditions argue strongly for a focus on the rapid development and deployment of hybrids. Due to strict stewardship requirements for transgenic plants, Arcadia and Mahyco have, and continue to have, concerns about potential programs that would make transgenic events broadly available to unmonitored breeding programs. Thus hybrid seed were originally viewed as a best mode for this technology to benefit Indian agriculture. Mahyco has made the commitment to make hybrid seed available to distributors throughout India, and both Mahyco and Arcadia have made significant investments in developing and delivering these technologies in hybrid lines to Indian growers.

In response to a specific USAID query, the program provides for a concurrent "push" strategy to develop open pollinated varieties of rice and wheat that have increased salinity tolerance. These varieties would be made available through the USAID and Indian public sector agencies to seed distributors broadly throughout India at pricing similar to comparable OP varieties. As this component of the program, develops, Mahyco and Arcadia will make the commitment to regularly revisit with USAID the prospects for a similar shadowing path of OP varieties for each of NUE and DT/WUE in rice and wheat.

In addition, Arcadia will commit to collaborating with appropriate public sector agencies in India to conduct field work to assess the potential of these gene technologies to create incremental value to farmers through the earning and trading of carbon credits, should such schemes develop for Indian agriculture. Arcadia is in the second year of such a program in Ningxia, China and would apply our knowledge to similar work in India. Should such a carbon credit and trading scheme develop for Indian agriculture, some of the resulting incremental value received by farmers could be pledged against the cost of hybrid seed. This would help poorer growers access not only the NUE and other technologies, but also the superior agronomic properties inherent in hybrid seed.

The product development plan is built on the following elements:
[...*...]

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

Duration of Activity

The scope of the sponsored work described is three years. At the end of that time much will remain to be done to develop reliable products with significant overall performance. However, within three years, the potential country-wide impact of the NUE, ST, and DT/WUE traits for indica rice will be well-demonstrated. Within three years the prototypes for NUE, ST, and DT/WUE traits for Indian wheat will be in hand. Additionally, there will be a data-driven base to evaluate the premise of carbon credit trading to address greenhouse gas issues and to enable a broader range of Indian farmers to access the best technology to feed India's population.

Role of USAID

Mahyco is a highly successful Indian seed company known for reliability and quality of its seed across a broad range of crops. While likely possessing the best transgenic trait development program in India, Mahyco still has to carefully plan for the resources it can invest in transgenic traits. Arcadia is a relatively young California-based technology company that has promising technology for crop yields; however, Arcadia has yet to reach a break-even point as a company.

The role of USAID is basically two-fold.

1. The funding requested is critical to accelerate trait development for India. This funding is critical to shaping the impact as broadly and as quickly as possible to protect crop yields under the increasingly difficult conditions faced by Indian agriculture.
2. The structure of the program is meant to keep USAID involved in decisions about where and how to implement the technology in rice and wheat. It is anticipated that Indian public sector agencies will be increasingly and necessarily involved in this work in coming years. As an active player in the development of these technologies and in shaping the product development paths taken, the USAID will hopefully also be a key intermediary in productive and efficient interactions with the appropriate public sector agencies in India.

Project Management

Relevant Organizational Experiences

Arcadia Biosciences, Inc was founded in 2003 and is a privately held biotechnology company incorporated in Arizona, with administrative offices in Phoenix and its main lab facility and operation headquartered in Davis, California. Arcadia's mission statement is to develop plants that improve the environment and human health by 1) identifying technologies that have achieved proof of concept and that fit our mission, 2) developing technologies by investing in optimization and validating performance and 3) commercialization through strategic partnerships with seed companies or selling directly into the target market.

Both Arcadia and Mahyco have experience and infrastructure to do field trials of genetically modified (GM) rice. Arcadia has a record of cooperation with the California Rice Commission doing field trials for salt tolerance and nitrogen use efficiency in multiple locations. Mahyco currently has transgenic rice lines with other traits under evaluation. Mahyco is currently an active participant in field tests of Bt eggplant and has been a leader in the testing, commercial launch, and current sales of Bt cotton seeds in India.

Both partners have experience and infrastructure for the transformation of indica varieties of rice. Arcadia has a license for the Japan Tobacco methodology and currently works with transformation of japonica, indica and Nerica rice types. Mahyco has invested and has in place the infrastructure and expertise to develop and launch commercial GM hybrid indica rice. In addition, Mahyco has proprietary access to a wide range of superior germplasm adapted to India in which to express transgenes affecting stress tolerance.

Both Arcadia and Mahyco have in place and available the necessary personnel, labs, tissue culture facilities, growth chambers, and greenhouses adapted for rice available to execute the proposed work. Mahyco additionally has multiple field locations geographically distributed across the main rice cultivation areas in India. Mahyco is actively introgressing transgenes from prototype lines into elite germplasm and has all the necessary tools and expertise operational on the ground in India.

Both partners have experience and a positive reputation regarding the processes to obtain regulatory approval. While working at Calgene, Arcadia staff obtained FDA and USDA approvals for GM tomato, cotton, and canola products and are actively pursuing similar approvals now for Arcadia safflower lines. Mahyco has

GM products in the market in India; is an active partner in the Bt eggplant development collaboration and maintains a proactive relationship with the regulatory agencies and public approval issues in India.

Arcadia is a leader in the establishment of a framework for rice growers to collect revenue based on carbon credits earned by use of NUE technologies that decrease amounts of greenhouse gases generated by rice production. Arcadia is reviewing the expansion of its current activities in China to India under the auspices of this proposal and in collaboration with Mahyco.

Arcadia and Mahyco already have a commercial agreement in place for NUE and salt tolerance technologies in rice for India and, under the auspices of this proposal, a commitment to reach similar agreement on commercial development of the drought tolerance trait. Arcadia and Mahyco researchers are in regular contact including exchange visits for face to face meetings. Both partners are highly motivated to get actual product events and lines into field testing and into the market. Mahyco's plans are to make planting seed of hybrid rice varieties widely available to distributors throughout India. Arcadia is a privately-owned US company while Mahyco is an established well-known and profitable Indian seed company. The proposed work here would accelerate the introduction and the breadth of a comprehensive solution to salt, drought & NUE for rice grown in India, and its success would also affect the implementation of the same traits in wheat for which ABS and Mahyco are also contractual and committed partners.

Explanation of Partners

It is important to note that Arcadia is funding salt, NUE and drought research using its own resources. In addition Mahyco is funding salt tolerance and NUE traits for application in India. By working with funding from USAID there is an opportunity to accelerate and enhance the research and product development phases of the project to have a more broad impact on agriculture. Arcadia is seeking only partial funding of a multi-year research and development program.

Arcadia currently operates three research facilities. The Davis, CA (202 Cousteau Place Suite 200) facility occupies 10,000 square feet and houses approximately 50 full time employees. The facility is fully equipped for growing, cataloging and sampling plants. In addition, the facility is also a fully operational molecular biology lab. The Woodland, CA greenhouse facility contains 16 computer-controlled greenhouses with 22,000 square feet, 10 acres of field, and currently houses 6 full time employees. A seed processing lab and environmentally regulated seed storage units are on site. The Seattle, WA (410 West Harrison, Suite 150) facility occupies 4,300 square feet and houses eleven full time employees. The facility is a fully operational molecular biology lab.

Mahyco operates from 50+ locations around India with a staff of 900+ full time employees. With research and testing farms spread around the country, Mahyco tests all its pipeline products in the agroclimatic zones where the products are to be sold and is able to address potentially all rice markets. The rice breeding stations at Hyderabad and Karnal are supported with significant greenhouse and other resources. The biotechnology facilities located at Dawalwadi also have greenhouse facilities which grow rice as well as molecular breeding support for rapid introgression of given trait.

Budget Narrative

Arcadia requests a grant of 1 million US dollars to partially cover the cost for project year one. The estimated requests for year 2 and year 3 of the project are 1.4 and 1.1 million US dollars, respectively. This funding will help support the proposed work plan, which is designed to accelerate a timely and broad introduction of these productivity traits into Indian varieties of rice and wheat. These funds will be shared by Arcadia and Mahyco in proportion to the costs incurred in pursuit of the USAID program objectives. The costs will correspond to the following division of tasks with partner primarily responsible indicated.

[...*...]

Arcadia and Mahyco have already made investments to date in developing these traits in rice for India. As the proposed work proceeds, Arcadia and Mahyco will make ongoing significant investments in project management and commercialization. Costs of these efforts are not captured in the funding request. [...*...] The curriculum vitae of all key scientific managers are included in the appendix.

Implementation Plan

Description

As much development work, greenhouse staging, field work, and regulatory data collection as possible is planned to occur in India. Mahyco is uniquely able to carry out this work. Arcadia proposes to subcontract directly to Mahyco sets of tasks. As transgenic materials progress, Mahyco will be able to redeploy appropriately skilled and experienced staff rather than recruiting and training new staff specifically to work on this project. Mahyco will be responsible for the execution of the subcontracted work; however, the close working relationship with Arcadia (across multiple crops beyond just rice and wheat) will bring the combined experience of the researchers and directors of both companies to bear on the project.

Headcount

Five senior scientists (CVs attached) will lead the project research components:
[...*...]

Cross-project issues and research overall will be managed cooperatively by [...*...] and [...*...], research directors of Mahyco and Arcadia, respectively. In addition, Arcadia will make available as needed:

1. [...*...] field trial experience with all three traits in rice, and also greenhouse gas emissions measurements from rice fields in China.

2. [...*...]
3. [...*...] In collaboration with [...*...] will maintain project awareness and direction regarding developing market forces in Indian agriculture as they affect the implementation of the targeted crop traits.
4. [...*...] extensive experience with international regulatory approval requirements.
5. [...*...] responsible for facilitating the Arcadia components of collaboration with Mahyco.

Other than the possible assignment of time by [...*...] and [...*...] to Mahyco subcontracts, the above professional work is only partially captured in overhead costs and not directly budgeted. In addition, the costs of ongoing work to date by both companies is contributed, as well as the continuing costs of transgenic NUE wheat lines developed under contract by Arcadia. The proposed budget consists of basically two types of items:

[...*...]

[...*...]

[...*...]

References

Apse, M.P., Aharon, G.S., Snedden, W.A., and Blumwald, E. 1999. Salt tolerance conferred by overexpression of a vacuolar Na^+/H^+ antiporter in *Arabidopsis*. Science **285:** 1256-1258.

Cuin, T.A., Betts, S.A., Chalmandrier, R., and Shabala, S. 2008. A root's ability to retain K^+ correlates with salt tolerance in wheat. J. Exp. Bot. **59**: 2697-2706.

*Fukuda, A., Nakamura, A., Tagiri, A., Tanaka, H., Miyao, A., Hirochika, H., and Tanaka, Y. 2004. Function, intracellular localization and the importance in salt tolerance of a vacuolar Na+/H+ antiporter from rice. Plant Cell Physiol. **45**:146-59.*

Good, A.G., Johnson, S.J., DePauw, M.D., Carroll, R.T., Savidov, N., Vidamir, J., Lu, Z., Taylor, G. and Stroeher, V. 2007. Engineering nitrogen use efficiency with alanine aminotransferase. Can. J. Bot. **85**: 52—262.

Grattan, S., Zeng, L., Shannon, M.C., and Roberts, S.R. 2002. Rice is more sensitive than previously thought. California Agriculture **56:** 189-195.

Maas E.V. 1986. Salt tolerance of plants. Applied Agricultural Research **1**: 12-26.

Prabhakar, S.V.R.K., and Shaw, R. 2008. Climate change adaptation implications for drought risk mitigation: a perspective for India. Climatic Change **88**:113-130.

Rivero, R.M., Kojima, M., Gepstein, A., Sakakibara, H., Mittler, R., Gepstein, S., and Blumwald, E. 2007. Delayed leaf senescence induces extreme drought tolerance in a flowering plant. PNAS **104:** 19631-19636.

Rosegrant, M.W., Ringler, C., Suslser, T.B., Msangi, S., Zhu, T., Valmonte-Santos, R., and Wood, S. 2008. Reducing poverty and hunger in Asia. Agriculture in Asia: challenges and opportunities. IFPRI brief: March 2008 (http://www.ifpri.org/2020/focus/focus15/focus15_06. pdf)

Shrawat, A.K., Carroll, R.T., DePauw, M, Taylor, G.T, and Good, A.G. 2008. Genetic engineering of improved nitrogen use efficiency in rice by the tissue-specific expression of *alanine aminotransferase.* Plant Biotech. J. doi: 10.1111/j. 1467-7652.2008.00351.x

Strange, A., Park, J., Bennett, R., and Phipps, R. 2008. The use of life-cycle assessment to evaluate the environmental imipacts of growing genetically modified, nitrogen use-efficient canola. Plant Biotech. J. **6**: 337-345.

Thomas, H., and Howarth, C.J. 2000. Five ways to stay green. J.Exp.Bot. **51**: 329-337.

Verma, D., Singla-Pareek, S.L., Rajagopal, D., Reddy, M.K., and Sopory, S.K. 2007. Functional validation of a novel isoforms of Na+/H+ antiporter from Pennisetum glaucum for enhancing salinity tolerance in rice. J. Biosci. **31**:621-628.

Xue, Z.-Y., Zhi, D.-Y., Xue, G.-P., Zhang, H., Zhao, Y.-X., and Xia, G.-M. 2004. Enhanced salt tolerance of transgenic wheat (*Triticum aestivum* L.) expressing a vacuolar Na^+/H^+ antiporter gene with improved grain yields in saline soils in the filed and a reduced level of leaf Na^+. Plant Science **167:** 849-859.

Yamaguchi, T., Apse, M.P., Shi, H., and Blumwald, E. 2003. Topological analysis of a plant vacuolar Na^+/H^+ antiporter reveals a luminal C terminus that regulates antiporter cation selectivity. PNAS **100**:12510-12515.

Zhang, H.X., and Blumwald, E. 2001. Transgenic salt-tolerant tomato plants accumulate salt in foliage but not in fruit. Nature Biotechnology **19**: 765-768.

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

Attachment B-2
BRANDING STRATEGY AND MARKING PLAN

To be Submitted for Agreement Officer Approval,
within 45 Days from Award

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

Attachment C

MANDATORY STANDARD PROVISIONS FOR U.S., NONGOVERNMENTAL ORGANIZATIONS

1. *APPLICABILITY OF 22 CFR PART 226 (May 2005)*

a. All provisions of 22 CFR Part 226 and all Standard Provisions attached to this agreement are applicable to the recipient and to subrecipients which meet the definition of "Recipient" in Part 226, unless a section specifically excludes a subrecipient from coverage. The recipient shall assure that subrecipients have copies of all the attached standard provisions.

b. For any subawards made with Non-US subrecipients the Recipient shall include the applicable "Standard Provisions for Non-US Nongovernmental Recipients." Recipients are required to ensure compliance with monitoring procedures in accordance with OMB Circular A-133.

[END OF PROVISION]

2. *INELIGIBLE COUNTRIES (MAY 1986)*

Unless otherwise approved by the USAID Agreement Officer, funds will only be expended for assistance to countries eligible for assistance under the Foreign Assistance Act of 1961, as amended, or under acts appropriating funds for foreign assistance.

[END OF PROVISION]

3. *NONDISCRIMINATION (MAY 1986)*

No U.S. citizen or legal resident shall be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity funded by this award on the basis of race, color, national origin, age, handicap, or sex.

[END OF PROVISION]

4. *NONLIABILITY (NOVEMBER 1985)*

USAID does not assume liability for any third party claims for damages arising out of this award.

[END OF PROVISION]

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

5. *AMENDMENT (NOVEMBER 1985)*

The award may be amended by formal modifications to the basic award document or by means of an exchange of letters between the Agreement Officer and an appropriate official of the recipient.

[END OF PROVISION]

6. *NOTICES (NOVEMBER 1985)*

Any notice given by USAID or the recipient shall be sufficient only if in writing and delivered in person, mailed, or cabled as follows:

To the USAID Agreement Officer, at the address specified in the award.

To recipient, at recipient's address shown in the award or to such other address designated within the award.

Notices shall be effective when delivered in accordance with this provision, or on the effective date of the notice, whichever is later.

[END OF PROVISION]

7. *SUBAGREEMENTS (June 1999)*

Subrecipients, subawardees, and contractors have no relationship with USAID under the terms of this agreement. All required USAID approvals must be directed through the recipient to USAID.

[END OF PROVISION]

8. *OMB APPROVAL UNDER THE PAPERWORK REDUCTION ACT (December 2003)*

*lnformation collection requirements imposed by this cooperative agreement are covered by OMB approval number 0412-0510; the current expiration date is 04/30/2005. The Standard Provisions containing the requirement and an estimate of the public reporting burden (including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information) are

Standard Provision	Burden Estimate
Air Travel and Transportation	1(hour)
Ocean Shipment of Goods	.5
Patent Rights	.5
Publications	.5
Negotiated Indirect Cost Rates - (Predetermined and Provisional)	1
Voluntary Population Planning	.5
Protection of the Individual as a Research Subject	1

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

22 CFR 226	Burden Estimate

22 CFR 226.40-.49 Procurement of Goods and Services	1
22 CFR 226.30 - .36 Property Standards	1.5

Comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, may be sent to the Office of Procurement, Policy Division (M/OP/P) U.S. Agency for International Development, Washington, DC 20523-7801 and to the Office of Management and Budget, Paperwork Reduction Project (0412-0510), Washington, D.C 20503.

[END OF PROVISION]

9. USAID ELIGIBILITY RULES FOR GOODS AND SERVICES (April 1998)

(This provision is not applicable to goods or services which the recipient provides with private funds as part of a cost-sharing requirement, or with Program Income generated under the award.)

a. Ineligible and Restricted Goods and Services: USAID's policy on ineligible and restricted goods and services is contained in ADS Chapter 312.

(1) Ineligible Goods and Services. Under no circumstances shall the recipient procure any of the following under this award:

(i) Military equipment,
(ii) Surveillance equipment,
(iii) Commodities and services for support of police or other law enforcement activities,
(iv) Abortion equipment and services,
(v) Luxury goods and gambling equipment, or
(vi) Weather modification equipment.

(2) Ineligible Suppliers. Funds provided under this award shall not be used to procure any goods or services furnished by any firms or individuals whose name appears on the "Lists of Parties Excluded from Federal Procurement and Nonprocurement Programs." USAID will provide the recipient with a copy of these lists upon request.

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

(3) Restricted Goods. The recipient shall not procure any of the following goods and services without the prior approval of the Agreement Officer:

(i) Agricultural commodities,
(ii) Motor vehicles,
(iii) Pharmaceuticals,
(iv) Pesticides,
(v) Used equipment,
(vi) U.S. Government-owned excess property, or
(vii) Fertilizer.

Prior approval will be deemed to have been met when:

(i) the item is of U.S. source/origin;

(ii) the item has been identified and incorporated in the program description or schedule of the award (initial or revisions), or amendments to the award; and

(iii) the costs related to the item are incorporated in the approved budget of the award.

Where the item has not been incorporated into the award as described above, a separate written authorization from the Agreement Officer must be provided before the item is procured.

b. Source and Nationality: The eligibility rules for goods and services based on source and nationality are divided into two categories. One applies when the total procurement element during the life of the award is over $250,000, and the other applies when the total procurement element during the life of the award is not over $250,000, or the award is funded under the Development Fund for Africa (DFA) regardless of the amount. The total procurement element includes procurement of all goods (e.g., equipment, materials, supplies) and services. Guidance on the eligibility of specific goods or services may be obtained from the Agreement Officer. USAID policies and definitions on source, origin and nationality are contained in 22 CFR Part 228, Rules on Source, Origin and Nationality for Commodities and Services Financed by the Agency for International Development, which is incorporated into this Award in its entirety.

(1) For DFA funded awards or when the total procurement element during the life of this award is valued at $250,000 or less, the following rules apply:

(i) The authorized source for procurement of all goods and services to be reimbursed under the award is USAID Geographic Code 935, "Special Free World," and such goods and services must meet the source, origin

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

and nationality requirements set forth in 22 CFR Part 228 in accordance with the following order of preference:

(A) The United States (USAID Geographic Code 000),
(B) The Cooperating Country,
(C) USAID Geographic Code 941, and
(D) USAID Geographic Code 935.

(ii) Application of order of preference: When the recipient procures goods and services from other than U.S. sources, under the order of preference in paragraph (b)(1)(i) above, the recipient shall document its files to justify each such instance. The documentation shall set forth the circumstances surrounding the procurement and shall be based on one or more of the following reasons, which will be set forth in the Recipient's documentation:

(A) The procurement was of an emergency nature, which would not allow for the delay attendant to soliciting U.S. sources,

(B) The price differential for procurement from U.S. sources exceeded by 50% or more the delivered price from the non-U.S. source,

(C) Compelling local political considerations precluded consideration of U.S. sources,

(D) The goods or services were not available from U.S. sources, or

(E) Procurement of locally available goods and services, as opposed to procurement of U.S. goods and services, would best promote the objectives of the Foreign Assistance program under the award.

(2) When the total procurement element exceeds $250,000 (unless funded by DFA), the following applies: Except as may be specifically approved or directed in advance by the Agreement Officer, all goods and services financed with U.S. dollars, which will be reimbursed under this award must meet the source, origin and nationality requirements set forth in 22 CFR Part 228 for the authorized geographic code specified in the schedule of this award. If none is specified, the authorized source is Code 000, the United States.

c. Printed or Audio-Visual Teaching Materials: If the effective use of printed or audio-visual teaching materials depends upon their being in the local language and if such materials are intended for technical assistance projects or activities

financed by USAID in whole or in part and if other funds including U.S.-owned or U.S.-controlled local currencies are not readily available to finance the procurement of such materials, local language versions may be procured from the following sources, in order of preference:

(1) The United States (USAID Geographic Code 000),
(2) The Cooperating Country,
(3) "Selected Free World" countries (USAID Geographic Code 941), and
(4) "Special Free World" countries (USAID Geographic Code 899).

d. If USAID determines that the recipient has procured any of these goods or services under this award contrary to the requirements of this provision, and has received payment for such purposes, the Agreement Officer may require the recipient to refund the entire amount of the purchase.

This provision must be included in all subagreements which include procurement of goods or services which total over $5,000.

[END OF PROVISION]

10. DEBARMENT, SUSPENSION, AND OTHER RESPONSIBILITY MATTERS (January 2004)

a. The recipient agrees to notify the Agreement Officer immediately upon learning that it or any of its principals:

(1) Are presently excluded or disqualified from covered transactions by any Federal department or agency;

(2) Have been convicted within the preceding three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, tax evasion, receiving stolen property, making false claims, or obstruction of justice; commission of any other offense indicating a lack of business integrity or business honesty that seriously and directly affects your present responsibility;

(3) Are presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State, or local) with commission of any of the offenses enumerated in paragraph (1)(b); and

(4) Have had one or more public transactions (Federal, State, or local) terminated for cause or default within the preceding three years.

b. The recipient agrees that, unless authorized by the Agreement Officer, it will not knowingly enter into any subagreements or contracts under this cooperative agreement with a person or entity that is included on the Excluded Parties List System (http://epls.arnet.gov). The recipient further agrees to include the following provision in any subagreements or contracts entered into under this award:

DEBARMENT, SUSPENSION, INELIGIBILITY, AND VOLUNTARY EXCLUSION (DECEMBER 2003)

The recipient/contractor certifies that neither it nor its principals is presently excluded or disqualified from participation in this transaction by any Federal department or agency.

c. The policies and procedures applicable to debarment, suspension, and ineligibility under USAID-financed transactions are set forth in 22 CFR Part 208.

[END OF PROVISION]

11. DRUG-FREE WORKPLACE (January 2004)

a. The recipient agrees that it will publish a drug-free workplace statement and provide a copy to each employee who will be engaged in the performance of any Federal award. The statement must

(1) Tell the employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in its workplace;

(2) Specify the actions the recipient will take against employees for violating that prohibition; and

(3) Let each employee know that, as a condition of employment under any award, he or she

(i) Must abide by the terms of the statement, and
(ii) Must notify you in writing if he or she is convicted for a violation of a criminal drug statute occurring in the workplace, and must do so no more than five calendar days after the conviction.

b. The recipient agrees that it will establish an ongoing drug-free awareness program to inform employees about

(i) The dangers of drug abuse in the workplace;

(ii) Your policy of maintaining a drug-free workplace;

(iii) Any available drug counseling, rehabilitation and employee assistance programs; and

(iv) The penalties that you may impose upon them for drug abuse violations occurring in the workplace.

c. Without the Agreement Officer's expressed written approval, the policy statement and program must be in place as soon as possible, no later than the 30 days after the effective date of this award or the completion date of this award, whichever occurs first.

d. The recipient agrees to immediately notify the Agreement Officer if an employee is convicted of a drug violation in the workplace. The notification must be in writing, identify the employee's position title, the number of each award on which the employee worked. The notification must be sent to the Agreement Officer within ten calendar days after the recipient learns of the conviction.

e. Within 30 calendar days of learning about an employee's conviction, the recipient must either

(1) Take appropriate personnel action against the employee, up to and including termination, consistent with the requirements of the Rehabilitation Act of 1973 (29 USC 794), as amended, or

(2) Require the employee to participate satisfactorily in a drug abuse assistance or rehabilitation program approved for these purposes by a Federal, State or local health, law enforcement, or other appropriate agency.

f. The policies and procedures applicable to violations of these requirements are set forth in 22 CFR Part 210.

[END OF PROVISION]

12. EQUAL PROTECTION OF THE LAWS FOR FAITH-BASED AND COMMUNITY ORGANIZATIONS (February 2004)

a. The recipient may not discriminate against any beneficiary or potential beneficiary under this award on the basis of religion or religious belief. Accordingly, in providing services supported in whole or in part by this agreement or in its outreach activities related to such services, the recipient may not discriminate against current or prospective program beneficiaries on the basis of

religion, a religious belief, a refusal to hold a religious belief, or a refusal to actively participate in a religious practice;

b. The Federal Government must implement Federal programs in accordance with the Establishment Clause and the Free Exercise Clause of the First Amendment to the Constitution. Therefore, if the recipient engages in inherently religious activities, such as worship, religious instruction, and proselytization, it must offer those services at a different time or location from any programs or services directly funded by this award, and participation by beneficiaries in any such inherently religious activities must be voluntary.

c. If the recipient makes subawards under this agreement, faith-based organizations should be eligible to participate on the same basis as other organizations, and should not be discriminated against on the basis of their religious character or affiliation.

[END OF PROVISION]

13. IMPLEMENTATION OF E.O. 13224 — EXECUTIVE ORDER ON TERRORIST FINANCING (March 2002)

The Recipient is reminded that U.S. Executive Orders and U.S. law prohibits transactions with, and the provision of resources and support to, individuals and organizations associated with terrorism. It is the legal responsibility of the recipient to ensure compliance with these Executive Orders and laws. This provision must be included in all contracts/subawards issued under this agreement.

[END OF PROVISION]

14. MARKING UNDER USAID-FUNDED ASSISTANCE INSTRUMENTS (December 2005)

(a) Definitions

Commodities mean any material, article, supply, goods or equipment, excluding recipient offices, vehicles, and non-deliverable items for recipient's internal use, in administration of the USAID funded grant, cooperative agreement, or other agreement or subagreement.

Principal Officer means the most senior officer in a USAID Operating Unit in the field, e.g., USAID Mission Director or USAID Representative. For global programs managed from Washington but executed across many countries, such as disaster relief and assistance to internally displaced persons, humanitarian emergencies or immediate post conflict and political crisis response, the cognizant Principal Officer may be an Office Director, for example, the Directors of USAID/W/Office of Foreign Disaster Assistance and Office of Transition Initiatives. For non-presence countries, the cognizant Principal Officer is the Senior USAID officer in a regional USAID Operating

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

Unit responsible for the non-presence country, or in the absence of such a responsible operating unit, the Principal U.S Diplomatic Officer in the non-presence country exercising delegated authority from USAID.

Programs mean an organized set of activities and allocation of resources directed toward a common purpose, objective, or goal undertaken or proposed by an organization to carry out the responsibilities assigned to it.

Projects include all the marginal costs of inputs (including the proposed investment) technically required to produce a discrete marketable output or a desired result (for example, services from a fully functional water/sewage treatment facility).

Public communications are documents and messages intended for distribution to audiences external to the recipient's organization. They include, but are not limited to, correspondence, publications, studies, reports, audio visual productions, and other informational products; applications, forms, press and promotional materials used in connection with USAID funded programs, projects or activities, including signage and plaques; Web sites/Internet activities; and events such as training courses, conferences, seminars, press conferences and so forth.

Subrecipient means any person or government (including cooperating country government) department, agency, establishment, or for profit or nonprofit organization that receives a USAID subaward, as defined in 22 C.F.R. 226.2.

Technical Assistance means the provision of funds, goods, services, or other foreign assistance, such as loan guarantees or food for work, to developing countries and other USAID recipients, and through such recipients to subrecipients, in direct support of a development objective - as opposed to the internal management of the foreign assistance program.

USAID Identity (Identity) means the official marking for the United States Agency for International Development (USAID), comprised of the USAID logo or seal and new brandmark, with the tagline that clearly communicates that our assistance is "from the American people." The USAID Identity is available on the USAID website at **www.usaid.gov/branding** and USAID provides it without royalty, license, or other fee to recipients of USAID-funded grants, or cooperative agreements, or other assistance awards

(b) Marking of Program Deliverables

(1) All recipients must mark appropriately all overseas programs, projects, activities, public communications, and commodities partially or fully funded by a USAID grant or cooperative agreement or other assistance award or subaward with the USAID Identity, of a size and prominence equivalent to or greater than the recipient's, other donor's, or any other third party's identity or logo.

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

(2) The Recipient will mark all program, project, or activity sites funded by USAID, including visible infrastructure projects (for example, roads, bridges, buildings) or other programs, projects, or activities that are physical in nature (for example, agriculture, forestry, water management) with the USAID Identity. The Recipient should erect temporary signs or plaques early in the construction or implementation phase. When construction or implementation is complete, the Recipient must install a permanent, durable sign, plaque or other marking.

(3) The Recipient will mark technical assistance, studies, reports, papers, publications, audio-visual productions, public service announcements, Web sites/Internet activities and other promotional, informational, media, or communications products funded by USAID with the USAID Identity.

(4) The Recipient will appropriately mark events financed by USAID, such as training courses, conferences, seminars, exhibitions, fairs, workshops, press conferences and other public activities, with the USAID Identity. Unless directly prohibited and as appropriate to the surroundings, recipients should display additional materials, such as signs and banners, with the USAID Identity. In circumstances in which the USAID Identity cannot be displayed visually, the recipient is encouraged otherwise to acknowledge USAID and the American people's support.

(5) The Recipient will mark all commodities financed by USAID, including commodities or equipment provided under humanitarian assistance or disaster relief programs, and all other equipment, supplies, and other materials funded by USAID, and their export packaging with the USAID Identity.

(6) The Agreement Officer may require the USAID Identity to be larger and more prominent if it is the majority donor, or to require that a cooperating country government's identity be larger and more prominent if circumstances warrant, and as appropriate depending on the audience, program goals, and materials produced.

(7) The Agreement Officer may require marking with the USAID Identity in the event that the recipient does not choose to mark with its own identity or logo.

(8) The Agreement Officer may require a pre-production review of USAID-funded public communications and program materials for compliance with the approved Marking Plan.

(9) Subrecipients. To ensure that the marking requirements "flow down" to subrecipients of subawards, recipients of USAID funded grants and cooperative agreements or other assistance awards will include the USAID-approved marking provision in any USAID funded subaward, as follows:

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

"As a condition of receipt of this subaward, marking with the USAID Identity of a size and prominence equivalent to or greater than the recipient's, subrecipient's, other donor's or third party's is required. In the event the recipient chooses not to require marking with its own identity or logo by the subrecipient, USAID may, at its discretion, require marking by the subrecipient with the USAID Identity."

(10) Any 'public communications', as defined in 22 C.F.R. 226.2, funded by USAID, in which the content has not been approved by USAID, must contain the following disclaimer:

"This study/report/audio/visual/other information/media product (specify) is made possible by the generous support of the American people through the United States Agency for International Development (USAID). The contents are the responsibility of [insert recipient name] and do not necessarily reflect the views of USAID or the United States Government."

(11) The recipient will provide the Cognizant Technical Officer (CTO) or other USAID personnel designated in the grant or cooperative agreement with two copies of all program and communications materials produced under the award. In addition, the recipient will submit one electronic or one hard copy of all final documents to USAID's Development Experience Clearinghouse.

(c) Implementation of marking requirements.

(1) When the grant or cooperative agreement contains an approved Marking Plan, the recipient will implement the requirements of this provision following the approved Marking Plan.

(2) When the grant or cooperative agreement does not contain an approved Marking Plan, the recipient will propose and submit a plan for implementing the requirements of this provision within 45 days after the effective date of this provision. The plan will include:

(i) A description of the program deliverables specified in paragraph (b) of this provision that the recipient will produce as a part of the grant or cooperative agreement and which will visibly bear the USAID Identity.

(ii) the type of marking and what materials the applicant uses to mark the program deliverables with the USAID Identity,

(iii) when in the performance period the applicant will mark the program deliverables, and where the applicant will place the marking,

(3) The recipient may request program deliverables not be marked with the USAID Identity by identifying the program deliverables and providing a rationale

for not marking these program deliverables. Program deliverables may be exempted from USAID marking requirements when:

(i) USAID marking requirements would compromise the intrinsic independence or neutrality of a program or materials where independence or neutrality is an inherent aspect of the program and materials;

(ii) USAID marking requirements would diminish the credibility of audits, reports, analyses, studies, or policy recommendations whose data or findings must be seen as independent;

(iii) USAID marking requirements would undercut host-country government "ownership" of constitutions, laws, regulations, policies, studies, assessments, reports, publications, surveys or audits, public service announcements, or other communications better positioned as "by" or "from" a cooperating country ministry or government official;

(iv) USAID marking requirements would impair the functionality of an item;

(v) USAID marking requirements would incur substantial costs or be impractical;

(vi) USAID marking requirements would offend local cultural or social norms, or be considered inappropriate;

(vii) USAID marking requirements would conflict with international law.

(4) The proposed plan for implementing the requirements of this provision, including any proposed exemptions, will be negotiated within the time specified by the Agreement Officer after receipt of the proposed plan. Failure to negotiate an approved plan with the time specified by the Agreement Officer may be considered as noncompliance with the requirements is provision.

(d) Waivers.

(1) The recipient may request a waiver of the Marking Plan or of the marking requirements of this provision, in whole or in part, for each program, project, activity, public communication or commodity, or, in exceptional circumstances, for a region or country, when USAID required marking would pose compelling political, safety, or security concerns, or when marking would have an adverse impact in the cooperating country. The recipient will submit the request through the Cognizant Technical Officer. The Principal Officer is responsible for approvals or disapprovals of waiver requests.

(2) The request will describe the compelling political, safety, security concerns, or adverse impact that require a waiver, detail the circumstances and rationale for the waiver, detail the specific requirements to be waived, the specific portion of the Marking Plan to be waived, or specific marking to be waived, and include a description of how program materials will be marked (if at all) if the USAID Identity is removed. The request should also provide a rationale for any use of recipient's own identity/logo or that of a third party on materials that will be subject to the waiver.

(3) Approved waivers are not limited in duration but are subject to Principal Officer review at any time, due to changed circumstances.

(4) Approved waivers "flow down" to recipients of subawards unless specified otherwise. The waiver may also include the removal of USAID markings already affixed, if circumstances warrant.

(5) Determinations regarding waiver requests are subject to appeal to the Principal Officer's cognizant Assistant Administrator. The recipient may appeal by submitting a written request to reconsider the Principal Officer's waiver determination to the cognizant Assistant Administrator.

(e) Non-retroactivity. The requirements of this provision do not apply to any materials, events, or commodities produced prior to January 2, 2006. The requirements of this provision do not apply to program, project, or activity sites funded by USAID, including visible infrastructure projects (for example, roads, bridges, buildings) or other programs, projects, or activities that are physical in nature (for example, agriculture, forestry, water management) where the construction and implementation of these are complete prior to January 2, 2006 and the period of the cooperative agreement does not extend past January 2, 2006.

[END OF PROVISION]

15. REGULATIONS GOVERNING EMPLOYEES (AUGUST 1992)

a. The recipient's employees shall maintain private status and may not rely on local U.S. Government offices or facilities for support while under this cooperative agreement.

b. The sale of personal property or automobiles by recipient employees and their dependents in the foreign country to which they are assigned shall be subject to the same limitations and prohibitions which apply to direct-hire USAID personnel employed by the Mission, including the rules contained in 22 CFR Part 136, except as this may conflict with host government regulations.

c. Other than work to be performed under this award for which an employee is assigned by the recipient, no employee of the recipient shall engage directly or

indirectly, either in the individual's own name or in the name or through an agency of another person, in any business, profession, or occupation in the foreign countries to which the individual is assigned, nor shall the individual make loans or investments to or in any business, profession or occupation in the foreign countries to which the individual is assigned.

d. The recipient's employees, while in a foreign country, are expected to show respect for its conventions, customs, and institutions, to abide by its applicable laws and regulations, and not to interfere in its internal political affairs.

e. In the event the conduct of any recipient employee is not in accordance with the preceding paragraphs, the recipient's chief of party shall consult with the USAID Mission Director and the employee involved and shall recommend to the recipient a course of action with regard to such employee.

f. The parties recognize the rights of the U.S. Ambassador to direct the removal from a country of any U.S. citizen or the discharge from this cooperative agreement award of any third country national when, in the discretion of the Ambassador, the interests of the United States so require.

g. If it is determined, either under (e) or (f) above, that the services of such employee should be terminated, the recipient shall use its best efforts to cause the return of such employee to the United States, or point of origin, as appropriate.

[END OF PROVISION]

16. CONVERSION OF UNITED STATES DOLLARS TO LOCAL CURRENCY (NOVEMBER 1985)

Upon arrival in the Cooperating Country, and from time to time as appropriate, the recipient's chief of party shall consult with the Mission Director who shall provide, in writing, the procedure the recipient and its employees shall follow in the conversion of United States dollars to local currency. This may include, but is not limited to, the conversion of currency through the cognizant United States Disbursing Officer or Mission Controller, as appropriate.

[END OF PROVISION]

17. USE OF POUCH FACILITIES (AUGUST 1992)

a. Use of diplomatic pouch is controlled by the Department of State. The Department of State has authorized the use of pouch facilities for USAID recipients and their employees as a general policy, as detailed in items (1) through (6) below. However, the final decision regarding use of pouch facilities rest with the Embassy or USAID Mission. In consideration of the use of pouch facilities, the recipient and its employees agree to indemnify and hold harmless,

the Department of State and USAID for loss or damage occurring in pouch transmission:

(1) Recipients and their employees are authorized use of the pouch for transmission and receipt of up to a maximum of .9 kgs per shipment of correspondence and documents needed in the administration of assistance programs.

(2) U.S. citizen employees are authorized use of the pouch for personal mail up to a maximum of .45 kgs per shipment (but see (a)(3) below).

(3) Merchandise, parcels, magazines, or newspapers are not considered to be personal mail for purposes of this standard provision and are not authorized to be sent or received by pouch.

(4) Official and personal mail pursuant to a.1. and 2. above sent by pouch should be addressed as follows:

Name of individual or organization (followed by letter symbol "G")
City Name of post (USAID/)
Agency for International Development
Washington, D.C. 20523-0001

(5) Mail sent via the diplomatic pouch may not be in violation of U.S. Postal laws and may not contain material ineligible for pouch transmission.

(6) Recipient personnel are NOT authorized use of military postal facilities (APO/FPO). This is an Adjutant General's decision based on existing laws and regulations governing military postal facilities and is being enforced worldwide.

b. The recipient shall be responsible for advising its employees of this authorization, these guidelines, and limitations on use of pouch facilities.

c. Specific additional guidance on Recipient use of pouch facilities in accordance with this standard provision is available from the Post Communication Center at the Embassy or USAID Mission.

[END OF PROVISION]

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

18. INTERNATIONAL AIR TRAVEL AND TRANSPORTATION (JUNE 1999)

a. PRIOR BUDGET APPROVAL

In accordance with OMB Cost Principles, direct charges for foreign travel costs are allowable only when each foreign trip has received prior budget approval. Such approval will be deemed to have been met when:

(1) the trip is identified. Identification is accomplished by providing the following information: the number of trips, the number of individuals per trip, and the destination country(s).

(2) the information noted at (a)(1) above is incorporated in: the proposal, the program description or schedule of the award, the implementation plan (initial or revisions), or amendments to the award; and

(3) the costs related to the travel are incorporated in the approved budget of the award.

The Agreement Officer may approve travel which has not been incorporated in writing as required by paragraph (a)(2). In such case, a copy of the Agreement Officer's approval must be included in the agreement file.

b. NOTIFICATION

(1) As long as prior budget approval has been met in accordance with paragraph (a) above, a separate Notification will not be necessary unless:

(i) the primary purpose of the trip is to work with USAID Mission personnel, or

(ii) the recipient expects significant administrative or substantive programmatic support from the Mission.

Neither the USAID Mission nor the Embassy will require Country Clearance of employees or contractors of USAID Recipients.

(2) Where notification is required in accordance with paragraph (1)(i) or (ii) above, the recipient will observe the following standards:

(i) Send a written notice to the cognizant USAID Technical Office in the Mission. If the recipient's primary point of contact is a Technical Officer in USAID/W, the recipient may send the notice to that person. It will be the responsibility of the USAID/W Technical Officer to forward the notice to the field.

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

(ii) The notice should be sent as far in advance as possible, but at least 14 calendar days in advance of the proposed travel. This notice may be sent by fax or e-mail. The recipient should retain proof that notification was made.

(iii) The notification shall contain the following information: the award number, the cognizant Technical Officer, the traveler's name (if known), date of arrival, and the purpose of the trip.

(iv) The USAID Mission will respond only if travel has been denied. It will be the responsibility of the Technical Officer in the Mission to contact the recipient within 5 working days of having received the notice if the travel is denied. If the recipient has not received a response within the time frame, the recipient will be considered to have met these standards for notification, and may travel.

(v) If a subrecipient is required to issue a Notification, as per this section, the subrecipient may contact the USAID Technical Officer directly, or the prime may contact USAID on the subrecipient's behalf.

c. SECURITY ISSUES

Recipients are encouraged to obtain the latest Department of State Travel Advisory Notices before travelling. These Notices are available to the general public and may be obtained directly from the State Department, or via Internet.

Where security is a concern in a specific region, recipients may choose to notify the US Embassy of their presence when they have entered the country. This may be especially important for long-term posting.

d. USE OF U.S.-OWNED LOCAL CURRENCY

Travel to certain countries shall, at USAID's option, be funded from U.S.-owned local currency. When USAID intends to exercise this option, USAID will either issue a U.S. Government S.F. 1169, Transportation Request (GTR) which the Recipient may exchange for tickets, or issue the tickets directly. Use of such U.S.-owned currencies will constitute a dollar charge to this cooperative agreement.

e. THE FLY AMERICA ACT

The Fly America Act (49 U.S.C. 40118) requires that all air travel and shipments under this award must be made on U.S. flag air carriers to the extent service by such carriers is available. The Administrator of General Services Administration (GSA) is authorized to issue regulations for purposes of implementation. Those regulations may be found at 41 CFR part 301, and are hereby incorporated by reference into this award.

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

f. COST PRINCIPLES

The recipient will be reimbursed for travel and the reasonable cost of subsistence, post differentials and other allowances paid to employees in international travel status in accordance with the recipient's applicable cost principles and established policies and practices which are uniformly applied to federally financed and other activities of the Recipient.

If the recipient does not have written established policies regarding travel costs, the standard for determining the reasonableness of reimbursement for overseas allowance will be the Standardized Regulations (Government Civilians, Foreign Areas), published by the U.S. Department of State, as from time to time amended. The most current subsistence, post differentials, and other allowances may be obtained from the Agreement Officer.

g. SUBAWARDS.

This provision will be included in all subawards and contracts which require international air travel and transportation under this award.

[END OF PROVISION]

19. OCEAN SHIPMENT OF GOODS (JUNE 1999)

a. At least 50% of the gross tonnage of all goods purchased under this agreement and transported to the cooperating countries shall be made on privately owned U.S. flag commercial ocean vessels, to the extent such vessels are available at fair and reasonable rates for such vessels.

b. At least 50% of the gross freight revenue generated by shipments of goods purchased under this agreement and transported to the cooperating countries on dry cargo liners shall be paid to or for the benefit of privately owned U.S. flag commercial ocean vessels to the extent such vessels are available at fair and reasonable rates for such vessels.

c. When U.S. flag vessels are not available, or their use would result in a significant delay, the Recipient may request a determination of non-availability from the USAID Transportation Division, Office of Procurement, Washington, D.C. 20523, giving the basis for the request which will relieve the Recipient of the requirement to use U.S. flag vessels for the amount of tonnage included in the determination. Shipments made on non-free world ocean vessels are not reimbursable under this cooperative agreement.

d. The recipient shall send a copy of each ocean bill of lading, stating all of the carrier's charges including the basis for calculation such as weight or cubic measurement, covering a shipment under this agreement to:

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

U.S. Department of Transportation,
Maritime Administration, Division of National Cargo,
400 7th Street, S.W.,
Washington, DC 20590, and

U.S. Agency for International Development,
Office of Procurement, Transportation Division
1300 Pennsylvania Avenue, N.W.
Washington, DC 20523-7900

e. Shipments by voluntary nonprofit relief agencies (i.e., PVOs) shall be governed by this standard provision and by USAID Regulation 2, "Overseas Shipments of Supplies by Voluntary Nonprofit Relief Agencies" (22 CFR Part 202).

f. Shipments financed under this cooperative agreement must meet applicable eligibility requirements set out in 22 CFR 228.21.

[END OF PROVISION]

20. LOCAL PROCUREMENT (April 1998)

a. Financing local procurement involves the use of appropriated funds to finance the procurement of goods and services supplied by local businesses, dealers or producers, with payment normally being in the currency of the cooperating country.

b. Locally financed procurements must be covered by source and nationality waivers as set forth in 22 CFR 228, Subpart F, except as provided for in mandatory standard provision, "USAID Eligibility Rules for Goods and Services," or when one of the following exceptions applies:

(1) Locally available commodities of U.S. origin, which are otherwise eligible for financing, if the value of the transaction is estimated not to exceed $100,000 exclusive of transportation costs.

(2) Commodities of geographic code 935 origin if the value of the transaction does not exceed the local currency equivalent of $5,000.

(3) Professional Services Contracts estimated not to exceed $250,000.

(4) Construction Services Contracts estimated not to exceed $5,000,000.

(5) Commodities and services available only in the local economy (no specific per transaction value applies to this category). This category includes the following items:

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

(i) Utilities including fuel for heating and cooking, waste disposal and trash collection;

(ii) Communications - telephone, telex, fax, postal and courier services;

(iii) Rental costs for housing and office space;

(iv) Petroleum, oils and lubricants for operating vehicles and equipment;

(v) Newspapers, periodicals and books published in the cooperating country;

(vi) Other commodities and services and related expenses that, by their nature or as a practical matter, can only be acquired, performed, or incurred in the cooperating country, e.g., vehicle maintenance, hotel accommodations, etc.

c. The coverage on ineligible and restricted goods and services in the mandatory standard provision entitled, "USAID Eligibility Rules for Goods and Services," also apply to local procurement.

d. This provision will be included in all subagreements where local procurement of goods or services is a supported element.

[END OF PROVISION]

21. VOLUNTARY POPULATION PLANNING ACTIVITIES - MANDATORY REQUIREMENTS (MAY 2006)

Requirements for Voluntary Sterilization Programs

(1) None of the funds made available under this award shall be used to pay for the performance of involuntary sterilization as a method of family planning or to coerce or provide any financial incentive to any individual to practice sterilization.

Prohibition on Abortion-Related Activities:

(1) No funds made available under this award will be used to finance, support, or be attributed to the following activities: (i) procurement or distribution of equipment intended to be used for the purpose of inducing abortions as a method of family planning; (ii) special fees or incentives to any person to coerce or motivate them to have abortions; (iii) payments to persons to perform abortions or to solicit persons to undergo abortions; (iv) information, education, training, or communication programs that seek to promote abortion as a method of family

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

planning; and (v) lobbying for or against abortion. The term "motivate", as it relates to family planning assistance, shall not be construed to prohibit the provision, consistent with local law, of information or counseling about all pregnancy options.

(2) No funds made available under this award will be used to pay for any biomedical research which relates, in whole or in part, to methods of, or the performance of, abortions or involuntary sterilizations as a means of family planning. Epidemiologic or descriptive research to assess the incidence, extent or consequences of abortions is not precluded.

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

II. REQUIRED AS APPLICABLE STANDARD PROVISIONS FOR U.S., NONGOVERNMENTAL RECIPIENTS

1. NEGOTIATED INDIRECT COST RATE - PROVISIONAL (Profit) (April 1998)

NEGOTIATED INDIRECT COST RATE - PROVISIONAL (Profit) (April 1998)

a. Provisional indirect cost rates shall be established for the recipient's accounting periods during the term of this award. Pending establishment of revised provisional or final rates, allowable indirect costs shall be reimbursed at the rates, on the bases, and for the periods shown in the schedule of this award. Indirect cost rates and the appropriate bases shall be established in accordance with FAR Subpart 42.7.

b. Within six months after the close of the recipient's fiscal year, the recipient shall submit to the cognizant agency for audit the proposed final indirect cost rates and supporting cost data. If USAID is the cognizant agency or no cognizant agency has been designated, the recipient shall submit three copies of the proposed final indirect cost rates and supporting cost data, to the Overhead, Special Costs, and Closeout Branch, Office or Procurement, USAID, Washington, DC 20523-7802. The proposed rates shall be based on the recipient's actual cost experience during that fiscal year. Negotiations of final indirect cost rates shall begin soon after receipt of the recipient's proposal.

c. Allowability of costs and acceptability of cost allocation methods shall be determined in accordance with the applicable cost principles.

d. The results of each negotiation shall be set forth in an indirect cost rate agreement signed by both parties. Such agreement is automatically incorporated into this award and shall specify (1) the agreed upon final rates, (2) the bases to which the rates apply, (3) the fiscal year for which the rates apply, and (4) the items treated as direct costs. The agreement shall not change any monetary ceiling, award obligation, or specific cost allowance or disallowance provided for in this award.

e. Pending establishment of final indirect cost rates for any fiscal year, the recipient shall be reimbursed either at negotiated provisional rates or at billing rates acceptable to the Agreement Officer, subject to appropriate adjustment when the final rates for the fiscal year are established. To prevent substantial overpayment or underpayment, the provisional or billing rates may be prospectively or retroactively revised by mutual agreement.

f. Failure by the parties to agree on final rates is a 22 CFR 226.90 dispute.

[END OF PROVISION]

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

2. PUBLICATIONS AND MEDIA RELEASES (MARCH 2006)

PUBLICATIONS AND MEDIA RELEASES (MARCH 2006)

a. The recipient shall provide the USAID Cognizant Technical Officer one copy of all published works developed under the award with lists of other written work produced under the award. In addition, the recipient shall submit final documents in electronic format unless no electronic version exists at the following address:

Online (preferred)
http://www.dec.org/submit.cfm

Mailing address:
Document Acquisitions
USAID Development Experience Clearinghouse (DEC)
8403 Colesville Road Suite 210
Silver Spring, MD 20910-6368
Contract Information
Telephone (301) 562-0641
Fax (301) 588-7787
E-mail: **docsubmit@dec.cdie.org**

Electronic documents must consist of only one electronic file that comprises the complete and final equivalent of a hard copy. They may be submitted online (preferred); on 3.5" diskettes, a Zip disk, CD-R, or by e-mail. Electronic documents should be in PDF (Portable Document Format). Submission in other formats is acceptable but discouraged.

Each document submitted should contain essential bibliographic elements, such as 1) descriptive title; 2) author(s) name; 3) award number; 4) sponsoring USAID office; 5) strategic objective; and 6) date of publication;:

b. In the event award funds are used to underwrite the cost of publishing, in lieu of the publisher assuming this cost as is the normal practice, any profits or royalties up to the amount of such cost shall be credited to the award unless the schedule of the award has identified the profits or royalties as program income.

c. Except as otherwise provided in the terms and conditions of the award, the author or the recipient is free to copyright any books, publications, or other copyrightable materials developed in the course of or under this award, but USAID reserves a royalty-free nonexclusive and irrevocable right to reproduce, publish, or otherwise use, and to authorize others to use the work for Government purposes.

[END OF PROVISION]

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

3. PARTICIPANT TRAINING (April 1998)

PARTICIPANT TRAINING (April 1998)

a. Definition: A participant is any non-U.S. individual being trained under this award outside of that individual's home country.

b. Application of ADS Chapter 253: Participant training under this award shall comply with the policies established in ADS Chapter 253, Participant Training, except to the extent that specific exceptions to ADS 253 have been provided in this award with the concurrence of the Office of International Training.

c. Orientation: In addition to the mandatory requirements in ADS 253, recipients are strongly encouraged to provide, in collaboration with the Mission training officer, predeparture orientation and orientation in Washington at the Washington International Center. The latter orientation program also provides the opportunity to arrange for home hospitality in Washington and elsewhere in the United States through liaison with the National Council for International Visitors (NCIV). If the Washington orientation is determined not to be feasible, home hospitality can be arranged in most U.S. cities if a request for such is directed to the Agreement Officer, who will transmit the request to NCIV through EGAT/ED/PT.

[END OF PROVISION]

4. VOLUNTARY POPULATION PLANNING ACTIVITIES - SUPPLEMENTAL REQUIREMENTS (MAY 2006)

VOLUNTARY POPULATION PLANNING ACTIVITIES - SUPPLEMENTAL REQUIREMENTS (MAY 2006)

a. Voluntary Participation and Family Planning Methods:

(1) The recipient agrees to take any steps necessary to ensure that funds made available under this award will not be used to coerce any individual to practice methods of family planning inconsistent with such individual's moral, philosophical, or religious beliefs. Further, the recipient agrees to conduct its activities in a manner which safeguards the rights, health and welfare of all individuals who take part in the program.

(2) Activities which provide family planning services or information to individuals, financed in whole or in part under this agreement, shall provide a broad range of family planning methods and services available in the country in which the activity is conducted or shall provide information to such individuals regarding where such methods and services may be obtained.

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

b. Requirements for Voluntary Family Planning Projects

(1) A Family planning project must comply with the requirements of this paragraph.

(2) A project is a discrete activity through which a governmental or nongovernmental organization or public international organization provides family planning services to people and for which funds obligated under this award, or goods or services financed with such funds, are provided under this award, except funds solely for the participation of personnel in short-term, widely attended training conferences or programs.

(3) Service providers and referral agents in the project shall not implement or be subject to quotas or other numerical targets of total number of births, number of family planning acceptors, or acceptors of a particular method of family planning. Quantitative estimates or indicators of the number of births, acceptors, and acceptors of a particular method that are used for the purpose of budgeting, planning, or reporting with respect to the project are not quotas or targets under this paragraph, unless service providers or referral agents in the project are required to achieve the estimates or indicators.

(4) The project shall not include the payment of incentives, bribes, gratuities or financial rewards to (i) any individual in exchange for becoming a family planning acceptor or (ii) any personnel performing functions under the project for achieving a numerical quota or target of total number of births, number of family planning acceptors, or acceptors of a particular method of contraception. This restriction applies to salaries or payments paid or made to personnel performing functions under the project if the amount of the salary or payment increases or decreases based on a predetermined number of births, number of family planning acceptors, or number of acceptors of a particular method of contraception that the personnel affect or achieve.

(5) No person shall be denied any right or benefit, including the right of access to participate in any program of general welfare or health care, based on the person's decision not to accept family planning services offered by the project.

(6) The project shall provide family planning acceptors comprehensible information about the health benefits and risks of the method chosen, including those conditions that might render the use of the method inadvisable and those adverse side effects known to be consequent to the use of the method. This requirement may be satisfied by providing information in accordance with the medical practices and standards and

health conditions in the country where the project is conducted through counseling, brochures, posters, or package inserts.

(7) The project shall ensure that experimental contraceptive drugs and devices and medical procedures are provided only in the context of a scientific study in which participants are advised of potential risks and benefits.

(8) With respect to projects for which USAID provides, or finances the contribution of, contraceptive commodities or technical services and for which there is no subaward or contract under this award, the organization implementing a project for which such assistance is provided shall agree that the project will comply with the requirements of this paragraph while using such commodities or receiving such services.

(9)

i) The recipient shall notify USAID when it learns about an alleged violation in a project of the requirements of subparagraphs (3), (4), (5) or (7) of this paragraph;

ii) the recipient shall investigate and take appropriate corrective action, if necessary, when it learns about an alleged violation in a project of subparagraph (6) of this paragraph and shall notify USAID about violations in a project affecting a number of people over a period of time that indicate there is a systemic problem in the project.

iii) The recipient shall provide USAID such additional information about violations as USAID may request.

c. Additional Requirements for Voluntary Sterilization Programs

(1) None of the funds made available under this award shall be used to pay for the performance of involuntary sterilization as a method of family planning or to coerce or provide any financial incentive to any individual to practice sterilization.

(2) The recipient shall ensure that any surgical sterilization procedures supported in whole or in part by funds from this award are performed only after the individual has voluntarily appeared at the treatment facility and has given informed consent to the sterilization procedure. Informed consent means the voluntary, knowing assent from the individual after being advised of the surgical procedures to be followed, the attendant discomforts and risks, the benefits to be expected, the availability of alternative methods of family planning, the purpose of the operation and its irreversibility, and the option to withdraw consent anytime prior to the operation. An individual's consent is considered voluntary if it is based upon the exercise of free choice and is not obtained by any special

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

inducement or any element of force, fraud, deceit, duress, or other forms of coercion or misrepresentation.

(3) Further, the recipient shall document the patient's informed consent by (i) a written consent document in a language the patient understands and speaks, which explains the basic elements of informed consent, as set out above, and which is signed by the individual and by the attending physician or by the authorized assistant of the attending physician; or (ii) when a patient is unable to read adequately a written certification by the attending physician or by the authorized assistant of the attending physician that the basic elements of informed consent above were orally presented to the patient, and that the patient thereafter consented to the performance of the operation. The receipt of this oral explanation shall be acknowledged by the patient's mark on the certification and by the signature or mark of a witness who shall speak the same language as the patient.

(4) The recipient must retain copies of informed consent forms and certification documents for each voluntary sterilization procedure for a period of three years after performance of the sterilization procedure.

d. Prohibition on Abortion-Related Activities:

(1) No funds made available under this award will be used to finance, support, or be attributed to the following activities: (i) procurement or distribution of equipment intended to be used for the purpose of inducing abortions as a method of family planning; (ii) special fees or incentives to any person to coerce or motivate them to have abortions; (iii) payments to persons to perform abortions or to solicit persons to undergo abortions; (iv) information, education, training, or communication programs that seek to promote abortion as a method of family planning; and (v) lobbying for or against abortion. The term "motivate", as it relates to family planning assistance, shall not be construed to prohibit the provision, consistent with local law, of information or counseling about all pregnancy options.

(2) No funds made available under this award will be used to pay for any biomedical research which relates, in whole or in part, to methods of, or the performance of, abortions or involuntary sterilizations as a means of family planning. Epidemiologic or descriptive research to assess the incidence, extent or consequences of abortions is not precluded.

*e. Ineligibility of Foreign Nongovernmental Organizations that Perform or Actively Promote Abortion as a Method of Family Planning.

I. Grants and Cooperative Agreements with U.S. Nongovernmental Organizations

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

(1) The recipient agrees that it will not furnish assistance for family planning under this award to any foreign nongovernmental organization that performs or actively promotes abortion as a method of family planning in USAID-recipient countries or that provides financial support to any other foreign nongovernmental organization that conducts such activities. For purposes of this paragraph (e), a foreign nongovernmental organization is a nongovernmental organization that is not organized under the laws of any State of the United States, the District of Columbia or the Commonwealth of Puerto Rico.

(2) Prior to furnishing funds provided under this award to another nongovernmental organization organized under the laws of any State of the United States, the District of Columbia, or the Commonwealth of Puerto Rico, the recipient shall obtain the written agreement of such organization that the organization shall not furnish assistance for family planning under this award to any foreign nongovernmental organization except under the conditions and requirements that are applicable to the recipient as set forth in this paragraph (e).

(3) The recipient may not furnish assistance for family planning under this award to a foreign nongovernmental organization (the subrecipient) unless:

(i) The subrecipient certifies in writing that it does not perform or actively promote abortion as a method of family planning in USAID-recipient countries and does not provide financial support to any other foreign nongovernmental organization that conducts such activities; and

(ii) The recipient obtains the written agreement of the subrecipient containing the undertakings described in subparagraph (4) below.

(4) Prior to furnishing assistance for family planning under this award to a subrecipient, the subrecipient must agree in writing that:

(i) The subrecipient will not, while receiving assistance under this award, perform or actively promote abortion as a method of family planning in USAID-recipient countries or provide financial support to other foreign nongovernmental organizations that conduct such activities;

(ii) The recipient and authorized representatives of USAID may, at any reasonable time: (A) inspect the documents and materials maintained or prepared by the subrecipient in the usual course of its operations that describe the family planning activities of the subrecipient, including reports, brochures and service statistics; (B)

observe the family planning activity conducted by the subrecipient; (C) consult with family planning personnel of the subrecipient; and (D) obtain a copy of the audited financial statement or report of the subrecipient, if there is one;

(iii) In the event that the recipient or USAID has reasonable cause to believe that a subrecipient may have violated its undertaking not to perform or actively promote abortion as a method of family planning, the recipient shall review the family planning program of the subrecipient to determine whether a violation of the undertaking has occurred. The subrecipient shall make available to the recipient such books and records and other information as may be reasonably requested in order to conduct the review. USAID may also review the family planning program of the subrecipient under these circumstances, and USAID shall have access to such books and records and information for inspection upon request;

(iv) The subrecipient shall refund to the recipient the entire amount of assistance for family planning furnished to the subrecipient under this award in the event it is determined that the certification provided by the subrecipient under subparagraph (3), above, is false;

(v) Assistance for family planning provided to the subrecipient under this award shall be terminated if the subrecipient violates any undertaking in the agreement required by subparagraphs (3) and (4), and the subrecipient shall refund to the recipient the value of any assistance furnished under this award that is used to perform or actively promote abortion as a method of family planning; and

(vi) The subrecipient may furnish assistance for family planning under this award to another foreign nongovernmental organization (the subsubrecipient) only if: (A) the sub-subrecipient certifies in writing that it does not perform or actively promote abortion as a method of family planning in USAID-recipient countries and does not provide financial support to any other foreign nongovernmental organization that conducts such activities; and (B) the subrecipient obtains the written agreement of the sub-subrecipient that contains the same undertakings and obligations to the subrecipient as those provided by the subrecipient to the recipient as described in subparagraphs (4)(i)-(v) above.

(5) Agreements with subrecipients and sub-subrecipients required under subparagraphs (3) and (4) shall contain the definitions set forth in subparagraph (10) of this paragraph (e).

(6) The recipient shall be liable to USAID for a refund for a violation of any requirement of this paragraph (e) only if: (i) the recipient knowingly furnishes assistance for family planning to a subrecipient who performs or actively promotes abortion as a method of family planning; or (ii) the certification provided by a subrecipient is false and the recipient failed to make reasonable efforts to verify the validity of the certification prior to furnishing assistance to the subrecipient; or (iii) the recipient knows or has reason to know, by virtue of the monitoring which the recipient is required to perform under the terms of this award, that a subrecipient has violated any of the undertakings required under subparagraph (4) and the recipient fails to terminate assistance for family planning to the subrecipient, or fails to require the subrecipient to terminate assistance to a sub-subrecipient that violates any undertaking of the agreement required under subparagraph 4(vi), above. If the recipient finds, in exercising its monitoring responsibility under this award, that a subrecipient or sub-subrecipient receives frequent requests for the information described in subparagraph (10)(iii)(A)(II), below, the recipient shall verify that this information is being provided properly in accordance with subparagraph (10)(iii)(A)(II) and shall describe to USAID the reasons for reaching its conclusion.

(7) In submitting a request to USAID for approval of a recipient's decision to furnish assistance for family planning to a subrecipient, the recipient shall include a description of the efforts made by the recipient to verify the validity of the certification provided by the subrecipient. USAID may request the recipient to make additional efforts to verify the validity of the certification. USAID will inform the recipient in writing when USAID is satisfied that reasonable efforts have been made. If USAID concludes that these efforts are reasonable within the meaning of subparagraph (6) above, the recipient shall not be liable to USAID for a refund in the event the subrecipient's certification is false unless the recipient knew the certification to be false or misrepresented to USAID the efforts made by the recipient to verify the validity of the certification.

(8) It is understood that USAID may make independent inquiries, in the community served by a subrecipient or sub-subrecipient, regarding whether it performs or actively promotes abortion as a method of family planning.

(9) A subrecipient must provide the certification required under subparagraph (3) and a sub-subrecipient must provide the certification required under subparagraph (4)(vi) each time a new agreement is executed with the subrecipient or sub-subrecipient in furnishing assistance for family planning under the award.

(10) The following definitions apply for purposes of this paragraph (e):

(i) Abortion is a method of family planning when it is for the purpose of spacing births. This includes, but is not limited to, abortions performed for the physical or mental health of the mother, but does not include abortions performed if the life of the mother would be endangered if the fetus were carried to term or abortions performed following rape or incest (since abortion under these circumstances is not a family planning act).

(ii) To perform abortions means to operate a facility where abortions are performed as a method of family planning. Excluded from this definition are clinics or hospitals that do not include abortion in their family planning programs. Also excluded from this definition is the treatment of injuries or illnesses caused by legal or illegal abortions, for example, postabortion care.

(iii) To actively promote abortion means for an organization to commit resources, financial or other, in a substantial or continuing effort to increase the availability or use of abortion as a method of family planning.

(A) This includes, but is not limited to, the following:

(I) Operating a family planning counseling service that includes, as part of the regular program, providing advice and information regarding the benefits and availability of abortion as a method of family planning;

(II) Providing advice that abortion is an available option in the event other methods of family planning are not used or are not successful or encouraging women to consider abortion (passively responding to a question regarding where a safe, legal abortion may be obtained is not considered active promotion if the question is specifically asked by a woman who is already pregnant, the woman clearly states that she has already decided to have a legal abortion, and the family planning counselor reasonably believes that the ethics of the medical profession in the country requires a response regarding where it may be obtained safely);

(III) Lobbying a foreign government to legalize or make available abortion as a method of family planning or lobbying such a government to continue the legality of abortion as a method of family planning; and

(IV) Conducting a public information campaign in USAID-recipient countries regarding the benefits and/or availability of abortion as a method of family planning.

(B) Excluded from the definition of active promotion of abortion as a method of family planning are referrals for abortion as a result of rape or incest, or if the life of the mother would be endangered if the fetus were carried to term. Also excluded from this definition is the treatment of injuries or illnesses caused by legal or illegal abortions, for example, post-abortion care.

(C) Action by an individual acting in the individual's capacity shall not be attributed to an organization with which the individual is associated, provided that the organization neither endorses nor provides financial support for the action and takes reasonable steps to ensure that the individual does not improperly represent that the individual is acting on behalf of the organization.

(iv) To furnish assistance for family planning to a foreign nongovernmental organization means to provide financial support under this award to the family planning program of the organization, and includes the transfer of funds made available under this award or goods or services financed with such funds, but does not include the purchase of goods or services from an organization or the participation of an individual in the general training programs of the recipient, subrecipient or sub-subrecipient.

(v) To control an organization means the possession of the power to direct or cause the direction of the management and policies of an organization.

(11) In determining whether a foreign nongovernmental organization is eligible to be a subrecipient or sub-subrecipient of assistance for family planning under this award, the action of separate nongovernmental organizations shall not be imputed to the subrecipient or sub-subrecipient, unless, in the judgment of USAID, a separate nongovernmental organization is being used as a sham to avoid the restrictions of this paragraph (e). Separate nongovernmental organizations are those that have distinct legal existence in accordance with the laws of the countries in which they are organized. Foreign organizations that are separately organized shall not be considered separate, however, if one is controlled by the other. The recipient may request USAID's approval to treat as separate the family planning activities of two or more organizations, that would not be considered separate under the preceding sentence, if the recipient believes, and provides a written justification to USAID therefore, that the family planning activities of the organizations are sufficiently distinct so as to warrant not imputing the activity of one to the other.

(12) Assistance for family planning may be furnished under this award by a recipient, subrecipient or sub-subrecipient to a foreign government event though the government includes abortion in its family planning program, provided that no assistance may be furnished in support of the abortion activity of the government and any funds transferred to the government shall be placed in a segregated account to ensure that such funds may not be used to support the abortion activity of the government.

(13) The requirements of this paragraph are not applicable to child spacing assistance furnished to a foreign nongovernmental organization that is engaged primarily in providing health services if the objective of the assistance is to finance integrated health care services to mothers and children and child spacing is one of several health care services being provided by the organization as part of a larger child survival effort with the objective of reducing infant and child mortality.

II. Grants and Cooperative Agreements with Non-U.S., Nongovernmental Organizations

(1) The recipient certifies that it does not now and will not during the term of this award perform or actively promote abortion as a method of family planning in USAID-recipient countries or provide financial support to any other foreign nongovernmental organization that conducts such activities. For purposes of this paragraph (e), a foreign nongovernmental organization is a nongovernmental organization that is not organized under the laws of any State of the United States, the District of Columbia or the Commonwealth of Puerto Rico.

(2) The recipient agrees that the authorized representative of USAID may, at any reasonable time: (i) inspect the documents and materials maintained or prepared by the recipient in the usual course of its operations that describe the family planning activities of the recipient, including reports, brochures and service statistics; (ii) observe the family planning activity conducted by the recipient, (iii) consult with the family planning personnel of the recipient; and (iv) obtain a copy of the audited financial statement or report of the recipient, if there is one.

(3) In the event USAID has reasonable cause to believe that the recipient may have violated its undertaking not to perform or actively promote abortion as a method of family planning, the recipient shall make available to USAID such books and records and other information as USAID may reasonably request in order to determine whether a violation of the undertaking has occurred.

(4) The recipient shall refund to USAID the entire amount of assistance for family planning furnished under this award in the event it is determined that the certification provided by the recipient under subparagraph (1), above, is false.

(5) Assistance for family planning to the recipient under this award shall be terminated if the recipient violates any undertaking required by this paragraph (e), and the recipient shall refund to USAID the value of any assistance furnished under this award that is used to perform or actively promote abortion as a method of family planning.

(6) The recipient may not furnish assistance for family planning under this award to a foreign nongovernmental organization (the subrecipient) unless: (i) the subrecipient certifies in writing that it does not perform or actively promote abortion as a method of family planning in USAID-recipient countries and does not provide financial support to any other foreign nongovernmental organization that conducts such activities; and (ii) the recipient obtains the written agreement of the subrecipient containing the undertakings described in subparagraph (7), below.

(7) Prior to furnishing assistance for family planning under this award to a subrecipient, the subrecipient must agree in writing that:

(i) The subrecipient will not, while receiving assistance under this award, perform or actively promote abortion as a method of family planning in USAID-recipient countries or provide financial support to other nongovernmental organizations that conduct such activities.

(ii) The recipient and authorized representatives of USAID may, at any reasonable time: (A) inspect the documents and materials maintained or prepared by the subrecipient in the usual course of its operations that describe the family planning activities of the subrecipient, including reports, brochures and service statistics; (B) observe the family planning activity conducted by the subrecipient; (C) consult with family planning personnel of the subrecipient; and (D) obtain a copy of the audited financial statement or report of the subrecipient, if there is one.

(iii) In the event the recipient or USAID has reasonable cause to believe that a subrecipient may have violated its undertaking not to perform or actively promote abortion as a method of family planning, the recipient shall review the family planning program of the subrecipient to determine whether a violation of the undertaking has occurred. The subrecipient shall make available to the recipient such books and records and other information as may be reasonably requested in order to conduct the review. USAID may also review the family planning program of the subrecipient under these circumstances, and USAID shall have access to such books and records and information for inspection upon request.

(iv) The subrecipient shall refund to the recipient the entire amount of assistance for family planning furnished to the subrecipient under this

award in the event it is determined that the certification provided by the subrecipient under subparagraph (6), above, is false.

(v) Assistance for family planning to the subrecipient under this award shall be terminated if the subrecipient violates any undertaking required by this paragraph (e), and the subrecipient shall refund to the recipient the value of any assistance furnished under this award that is used to perform or actively promote abortion as a method of family planning.

(vi) The subrecipient may furnish assistance for family planning under this award to another foreign nongovernmental organization (the subsubrecipient) only if: (A) the sub-subrecipient certifies in writing that it does not perform or actively promote abortion as a method of family planning in USAID-recipient countries and does not provide financial support to any other foreign nongovernmental organization that conducts such activities; and (B) the subrecipient obtains the written agreement of the sub-subrecipient that contains the same undertakings and obligations to the subrecipient as those provided by the subrecipient to the recipient as described in subparagraphs (7)(i)-(v), above.

(8) Agreements with subrecipients and sub-subrecipients required under subparagraphs (6) and (7) shall contain the definitions set forth in subparagraph (13) of this paragraph (e).

(9) The recipient shall be liable to USAID for a refund for a violation by a subrecipient relating to its certification required under subparagraph (6) or by a subrecipient or a sub-subrecipient relating to its undertakings in the agreement required under subparagraphs (6) and (7) only if: (i) the recipient knowingly furnishes assistance for family planning to a subrecipient that performs or actively promotes abortion as a method of family planning; or (ii) the certification provided by a subrecipient is false and the recipient failed to make reasonable efforts to verify the validity of the certification prior to furnishing assistance to the subrecipient; or (iii) the recipient knows or has reason to know, by virtue of the monitoring that the recipient is required to perform under the terms of this award, that a subrecipient has violated any of the undertakings required under subparagraph (7) and the recipient fails to terminate assistance for family planning to the subrecipient, or fails to require the subrecipient to terminate assistance to a sub-subrecipient that violates any undertaking of the agreement required under subparagraph 7(vi), above. If the recipient finds, in exercising its monitoring responsibility under this award, that a subrecipient or sub-subrecipient receives frequent requests for the information described in subparagraph (13)(iii)(A)(II), below, the recipient shall verify that this information is being provided properly in accordance with subparagraph 13(iii)(A)(II) and shall describe to USAID the reasons for reaching its conclusion.

(10) In submitting a request to USAID for approval of a recipient's decision to furnish assistance for family planning to a subrecipient, the recipient shall include a description of the efforts made by the recipient to verify the validity of the certification provided by the subrecipient. USAID may request the recipient to make additional efforts to verify the validity of the certification. USAID will inform the recipient in writing when USAID is satisfied that reasonable efforts have been made. If USAID concludes that these efforts are reasonable within the meaning of subparagraph (9) above, the recipient shall not be liable to USAID for a refund in the event the subrecipient's certification is false unless the recipient knew the certification to be false or misrepresented to USAID the efforts made by the recipient to verify the validity of the certification.

(11) It is understood that USAID may make independent inquiries, in the community served by a subrecipient or sub-subrecipient, regarding whether it performs or actively promotes abortion as a method of family planning.

(12) A subrecipient must provide the certification required under subparagraph (6) and a sub-subrecipient must provide the certification required under subparagraph (7)(vi) each time a new agreement is executed with the subrecipient or sub-subrecipient in furnishing assistance for family planning under this award.

(13) The following definitions apply for purposes of paragraph (e):

(i) Abortion is a method of family planning when it is for the purpose of spacing births. This includes, but is not limited to, abortions performed for the physical or mental health of the mother but does not include abortions performed if the life of the mother would be endangered

if the fetus were carried to term or abortions performed following rape or incest (since abortion under these circumstances is not a family planning act).

(ii) To perform abortions means to operate a facility where abortions are performed as a method of family planning. Excluded from this definition are clinics or hospitals that do not include abortion in their family planning programs. Also excluded from this definition is the treatment of injuries or illnesses caused by legal or illegal abortions, for example, post-abortion care.

(iii) To actively promote abortion means for an organization to commit resources, financial or other, in a substantial or continuing effort to increase the availability or use of abortion as a method of family planning.

(A) This includes, but is not limited to, the following:

(I) Operating a family planning counseling service that includes, as part of the regular program, providing advice

and information regarding the benefits and availability of abortion as a method of family planning;

(II) Providing advice that abortion is an available option in the event other methods of family planning are not used or are not successful or encouraging women to consider abortion (passively responding to a question regarding where a safe, legal abortion may be obtained is not considered active promotion if the question is specifically asked by a woman who is already pregnant, the woman clearly states that she has already decided to have a legal abortion, and the family planning counselor reasonably believes that the ethics of the medical profession in the country requires a response regarding where it may be obtained safely);

(III) Lobbying a foreign government to legalize or make available abortion as a method of family planning or lobbying such a government to continue the legality of abortion as a method of family planning; and

(IV) Conducting a public information campaign in USAID-recipient countries regarding the benefits and/or availability of abortion as a method of family planning.

(B) Excluded from the definition of active promotion of abortion as a method of family planning are referrals for abortion as a result of rape or incest or if the life of the mother would be endangered if the fetus were carried to term. Also excluded from this definition is the treatment of injuries or illnesses caused by legal or illegal abortions, for example, post-abortion care.

(C) Action by an individual acting in the individual's own capacity shall not be attributed to an organization with which the individual is associated, provided that the organization neither endorses nor provides financial support for the action and takes reasonable steps to ensure that the individual does not improperly represent the individual is acting on behalf of the organization.

(iv) To furnish assistance for family planning to a foreign nongovernmental organization means to provide financial support under this award to the family planning program of the organization, and includes the transfer of funds made available under this award or goods or services financed with such funds, but does not include the purchase of goods or services from an organization or the participation of an individual in the

general training programs of the recipient, subrecipient or sub-subrecipient.

(v) To control an organization means the possession of the power to direct or cause the direction of the management and policies of an organization.

(14) In determining whether a foreign nongovernmental organization is eligible to be a recipient, subrecipient or sub-subrecipient of assistance for family planning under this award, the action of separate nongovernmental organizations shall not be imputed to the recipient, subrecipient or subsubrecipient, unless, in the judgment of USAID, a separate nongovernmental organization is being used as a sham to avoid the restrictions of this paragraph (e). Separate nongovernmental organizations are those that have distinct legal existence in accordance with the laws of the countries in which they are organized. Foreign organizations that are separately organized shall not be considered separate, however, if one is controlled by the other. The recipient may request USAID's approval to treat as separate the family planning activities of two or more organizations, which would not be considered separate under the preceding sentence, if the recipient believes, and provides a written justification to USAID therefore, that the family planning activities of the organizations are sufficiently distinct so as to warrant not imputing the activity of one of the other.

(15) Assistance for family planning may be furnished under this award by a recipient, subrecipient or sub-subrecipient to a foreign government even though the government includes abortion in its family planning program, provided that no assistance may be furnished in support of the abortion activity of the government and any funds transferred to the government shall be placed in a segregated account to ensure that such funds may not be used to support the abortion activity of the government.

(16) The requirements of this paragraph are not applicable to child spacing assistance furnished to a foreign nongovernmental organization that is engaged primarily in providing health services if the objective of the assistance is to finance integrated health care services to mothers and children and child spacing is one of several health care services being provided by the organization as part of a larger child survival effort with the objective of reducing infant and child mortality.

III. Exceptions

The paragraphs set forth in sections (I) and (II) above are not applicable in the situations described below:

(1) While the paragraphs are to be used in grants and cooperative agreements (and assistance subagreements) that provide financing for family planning activity or activities, if family planning is a component of an activity

involving assistance or other purposes, such as food and nutrition, health for education, paragraph (e), “Ineligibility of Foreign Nongovernmental Organizations that Perform or Actively Promote Abortion as a Method of Family Planning,” applies only to the family planning component.

(2) When health or child survival funds are used to provide assistance for child spacing as well as health purposes, these paragraphs are applicable to such assistance unless: (a) the foreign nongovernmental organization is one that primarily provides health services; (b) the objective of the assistance is to finance integrated health care services to mothers and children; and (c) child spacing is one of several health care services being provided as part of a larger child survival effort with the objective of reducing infant and child mortality. These paragraphs need not be included in the assistance agreement if it indicates that assistance for child spacing will be provided only in this way. USAID support under these circumstances is considered a contribution to a health service delivery program and not to a family planning program. In such a case, these paragraphs need not be included in an assistance agreement.

(3) These paragraphs need not be included in assistance agreements with United States nongovernmental organizations for family planning purposes if implementation of the activity does not involve assistance to foreign nongovernmental organizations.

*f. The recipient shall insert paragraphs (a), (b), (c), (d), and (f) of this provision in all subsequent subagreements and contracts involving family planning or population activities that will be supported in whole or in part from funds under this award. Paragraph (e) shall be inserted in subagreements and sub-subagreements in accordance with the terms of paragraph (e). The term subagreement means subgrants and subcooperative agreements.

[END OF PROVISION]

5. TITLE TO AND CARE OF PROPERTY (COOPERATING COUNTRY TITLE) (NOVEMBER 1985)

TITLE TO AND CARE OF PROPERTY (COOPERATING COUNTRY TITLE)
(NOVEMBER 1985)

a. Except as modified by the schedule of this cooperative agreement, title to all equipment, materials and supplies, the cost of which is reimbursable to the recipient by USAID or by the cooperating country, shall at all times be in the name of the cooperating country or such public or private agency as the cooperating country may designate, unless title to specified types or classes of equipment is reserved to USAID under provisions set forth in the schedule of this award. All such property shall be under the custody and control of recipient until

the owner of title directs otherwise or completion of work under this award or its termination, at which time custody and control shall be turned over to the owner of title or disposed of in accordance with its instructions. All performance guarantees and warranties obtained from suppliers shall be taken in the name of the title owner.

b. The recipient shall maintain and administer in accordance with sound business practice a program for the maintenance, repair, protection, and preservation of Government property so as to assure its full availability and usefulness for the performance of this cooperative agreement. The recipient shall take all reasonable steps to comply with all appropriate directions or instructions which the Agreement Officer may prescribe as reasonably necessary for the protection of the Government property.

c. The recipient shall prepare and establish a program, to be approved by the appropriate USAID Mission, for the receipt, use, maintenance, protection, custody and care of equipment, materials and supplies for which it has custodial responsibility, including the establishment of reasonable controls to enforce such program. The recipient shall be guided by the following requirements:

(1) Property Control: The property control system shall include but not be limited to the following:

(i) Identification of each item of cooperating country property acquired or furnished under the award by a serially controlled identification number and by description of item. Each item must be clearly marked “Property of (insert name of cooperating country).”

(ii) The price of each item of property acquired or furnished under this award.

(iii) The location of each item of property acquired or furnished under this award.

(iv) A record of any usable components which are permanently removed from items of cooperating country property as a result of modification or otherwise.

(v) A record of disposition of each item acquired or furnished under the award.

(vi) Date of order and receipt of any item acquired or furnished under the award.

(vii) The official property control records shall be kept in such condition that at any stage of completion of the work under this award, the status of

property acquired or furnished under this award may be readily ascertained. A report of current status of all items of property acquired or furnished under the award shall be submitted yearly concurrently with the annual report.

(2) Maintenance Program: The recipient's maintenance program shall be consistent with sound business practice, the terms of the award, and provide for:

(i) disclosure of need for and the performance of preventive maintenance,

(ii) disclosure and reporting of need for capital type rehabilitation, and

(iii) recording of work accomplished under the program:

(A) Preventive maintenance - Preventive maintenance is maintenance generally performed on a regularly scheduled basis to prevent the occurrence of defects and to detect and correct minor defects before they result in serious consequences.

(B) Records of maintenance - The recipient's maintenance program shall provide for records sufficient to disclose the maintenance actions performed and deficiencies discovered as a result of inspections.

(C) A report of status of maintenance of cooperating country property shall be submitted annually concurrently with the annual report.

d. Risk of Loss:

(1) The recipient shall not be liable for any loss of or damage to the cooperating country property, or for expenses incidental to such loss or damage except that the recipient shall be responsible for any such loss or damage (including expenses incidental thereto):

(i) Which results from willful misconduct or lack of good faith on the part of any of the recipient's directors or officers, or on the part of any of its managers, superintendents, or other equivalent representatives, who have supervision or direction of all or substantially all of the recipient's business, or all or substantially all of the recipient's operation at anyone plant, laboratory, or separate location in which this award is being performed;

(ii) Which results from a failure on the part of the recipient, due to the willful misconduct or lack of good faith on the part of any of its directors, officers, or other representatives mentioned in (i) above:

(A) to maintain and administer, in accordance with sound business practice, the program for maintenance, repair, protection, and preservation of cooperating country property as required by (i) above, or

(B) to take all reasonable steps to comply with any appropriate written directions of the Agreement Officer under (b) above;

(iii) For which the recipient is otherwise responsible under the express terms designated in the schedule of this award;

(vi) Which results from a risk expressly required to be insured under some other provision of this award, but only to the extent of the insurance so required to be procured and maintained, or to the extent of insurance actually procured and maintained, whichever is greater; or

(v) Which results from a risk which is in fact covered by insurance or for which the Recipient is otherwise reimbursed, but only to the extent of such insurance or reimbursement;

(vi) Provided, that, if more than one of the above exceptions shall be applicable in any case, the recipient's liability under anyone exception shall not be limited by any other exception.

(2) The recipient shall not be reimbursed for, and shall not include as an item of overhead, the cost of insurance, or any provision for a reserve, covering the risk of loss of or damage to the cooperating country property, except to the extent that USAID may have required the recipient to carry such insurance under any other provision of this award.

(3) Upon the happening of loss or destruction of or damage to the cooperating country property, the recipient shall notify the Agreement Officer thereof, shall take all reasonable steps to protect the cooperating country property from further damage, separate the damaged and undamaged cooperating country property, put all the cooperating country property in the best possible order, and furnish to the Agreement Officer a statement of:

(i) The lost, destroyed, or damaged cooperating country property;

(ii) The time and origin of the loss, destruction, or damage;

(iii) All known interests in commingled property of which the cooperating country property is a part; and

(iv) The insurance, if any, covering any part of or interest in such commingled property.

(4) The recipient shall make repairs and renovations of the damaged cooperating country property or take such other action as the Agreement Officer directs.

(5) In the event the recipient is indemnified, reimbursed, or otherwise compensated for any loss or destruction of or damage to the cooperating country property, it shall use the proceeds to repair, renovate or replace the cooperating country property involved, or shall credit such proceeds against the cost of the work covered by the award, or shall otherwise reimburse USAID, as directed by the Agreement Officer. The recipient shall do nothing to prejudice USAID's right to recover against third parties for any such loss, destruction, or damage, and upon the request of the Agreement Officer, shall, at the Governments expense, furnish to USAID all reasonable assistance and cooperation (including assistance in the prosecution of suits and the execution of instruments or assignments in favor of the Government) in obtaining recovery.

e. Access: USAID, and any persons designated by it, shall at all reasonable times have access to the premises wherein any cooperating country property is located, for the purpose of inspecting the cooperating country property.

f. Final Accounting and Disposition of Cooperating Country Property: Within 90 days after completion of this award, or at such other date as may be fixed by the Agreement Officer, the recipient shall submit to the Agreement Officer an inventory schedule covering all items of equipment, materials and supplies under the recipient's custody, title to which is in the cooperating country or public or private agency designated by the cooperating country, which have not been consumed in the performance of this award. The recipient shall also indicate what disposition has been made of such property.

g. Communications: All communications issued pursuant to this provision shall be in writing.

[END OF PROVISION]

6. PUBLIC NOTICES (MARCH 2004)

PUBLIC NOTICES (MARCH 2004)

It is USAID's policy to inform the public as fully as possible of its programs and activities. The recipient is encouraged to give public notice of the receipt of this award and, from time to time, to announce progress and accomplishments. Press releases or other public notices should include a statement substantially as follows:

"The U.S. Agency for International Development administers the U.S. foreign assistance program providing economic and humanitarian assistance in more than 120 countries worldwide."

The recipient may call on USAID's Bureau for Legislative and Public Affairs for advice regarding public notices. The recipient is requested to provide copies of notices or announcements to the cognizant technical officer and to USAID's Bureau for Legislative and Public Affairs as far in advance of release as possible.

[END OF PROVISION]

7. COST SHARING (MATCHING) (July 2002)

COST SHARING (MATCHING) (July 2002)

a. If at the end of any funding period, the recipient has expended an amount of non-Federal funds less than the agreed upon amount or percentage of total expenditures, the Agreement Officer may apply the difference to reduce the amount of USAID incremental funding in the following funding period. If the award has expired or has been terminated, the Agreement Officer may require the recipient to refund the difference to USAID.

b. The source, origin and nationality requirements and the restricted goods provision established in the Standard Provision entitled "USAID Eligibility Rules for Goods and Services" do not apply to cost sharing (matching) expenditures.

[END OF PROVISION]

8. PROHIBITION OF ASSISTANCE TO DRUG TRAFFICKERS (JUNE 1999)

PROHIBITION OF ASSISTANCE TO DRUG TRAFFICKERS (JUNE 1999)

a. USAID reserves the right to terminate assistance to, or take other appropriate measures with respect to, any participant approved by USAID who is found to have been convicted of a narcotics offense or to have been engaged in drug trafficking as defined in 22 CFR Part 140.

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

b. (1) For any loan over $1000 made under this agreement, the recipient shall insert a clause in the loan agreement stating that the loan is subject to immediate cancellation, acceleration, recall or refund by the recipient if the borrower or a key individual of a borrower is found to have been convicted of a narcotics offense or to have been engaged in drug trafficking as defined in 22 CFR Part

9. REPORTING OF FOREIGN TAXES (March 2006)

REPORTING OF FOREIGN TAXES (March 2006)

a. The recipient must annually submit a report by April 16 of the next year.

b. Contents of Report. The report must contain:

(i) Contractor/recipient name.

(ii) Contact name with phone, fax and email.

(iii) Agreement number(s).

(iv) Amount of foreign taxes assessed by a foreign government [each foreign government must be listed separately] on commodity purchase transactions valued at $500 or more financed with U.S. foreign assistance funds under this agreement during the prior U.S. fiscal year.

(v) Only foreign taxes assessed by the foreign government in the country receiving U.S. assistance is to be reported. Foreign taxes by a third party foreign government are not to be reported. For example, if an assistance program for Lesotho involves the purchase of commodities in South Africa using foreign assistance funds, any taxes imposed by South Africa would not be reported in the report for Lesotho (or South Africa).

(vi) Any reimbursements received by the Recipient during the period in (iv) regardless of when the foreign tax was assessed and any reimbursements on the taxes reported in (iv) received through March 31.

(vii) Report is required even if the recipient did not pay any taxes during the report period.

(viii) Cumulative reports may be provided if the recipient is implementing more than one program in a foreign country.

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

c. Definitions. For purposes of this clause:

(i) "Agreement" includes USAID direct and country contracts, grants, cooperative agreements and interagency agreements.

(ii) "Commodity" means any material, article, supply, goods, or equipment.

(iii) "Foreign government" includes any foreign governmental entity.

(iv) "Foreign taxes" means value-added taxes and custom duties assessed by a foreign government on a commodity. It does not include foreign sales taxes.

d. Where. Submit the reports to: [insert address and point of contact at the Embassy, Mission or FM/CMP as appropriate. see b. below] [optional with a copy to]

e. Subagreements. The recipient must include this reporting requirement in all applicable subcontracts, subgrants and other subagreements.

f. For further information see **http://www.state.gov/m/rm/c10443.htm**.

[END OF PROVISION]

10. FOREIGN GOVERNMENT DELEGATIONS TO INTERNATIONAL CONFERENCES (January 2002)

FOREIGN GOVERNMENT DELEGATIONS TO INTERNATIONAL CONFERENCES (January 2002)

Funds in this agreement may not be used to finance the travel, per diem, hotel expenses, meals, conference fees or other conference costs for any member of a foreign government's delegation to an international conference sponsored by a public international organization, except as provided in ADS Mandatory Reference "Guidance on Funding Foreign Government Delegations to International Conferences or as approved by the Agreement Officer.

These provisions also must be included in the Standard Provisions of any new grant or cooperative agreement to a public international organization or a U.S. or non-U.S. non-governmental organization financed with FY04 HIV/AIDS funds or modification to an existing grant or cooperative agreement that adds FY04 HIV/AIDS.

[END OF PROVISION]

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

11. USAID DISABILITY POLICY - ASSISTANCE (DECEMBER 2004)

USAID DISABILITY POLICY - ASSISTANCE (DECEMBER 2004)

a. The objectives of the USAID Disability Policy are (1) to enhance the attainment of United States foreign assistance program goals by promoting the participation and equalization of opportunities of individuals with disabilities in USAID policy, country and sector strategies, activity designs and implementation; (2) to increase awareness of issues of people with disabilities both within USAID programs and in host countries; (3) to engage other U.S. government agencies, host country counterparts, governments, implementing organizations and other donors in fostering a climate of nondiscrimination against people with disabilities; and (4) to support international advocacy for people with disabilities. The full text of the policy paper can be found at the following website: **http://www.usaid.gov/about/disability/DISABPOL.FlN.html**

b. USAID therefore requires that the recipient not discriminate against people with disabilities in the implementation of USAID funded programs and that it make every effort to comply with the objectives of the USAID Disability Policy in performing the program under this grant or cooperative agreement. To that end and to the extent it can accomplish this goal within the scope of the program objectives, the recipient should demonstrate a comprehensive and consistent approach for including men, women and children with disabilities.

[END OF PROVISION]

12. HOMELAND SECURITY PRESIDENTIAL DIRECTIVE - 12 (HSPD-12) (SEPTEMBER 2006)

In response to the general threat of unauthorized access to federal facilities and information systems, the President issued Homeland Security Presidential Directive-12. HSPD-12 requires all Federal agencies to use a common Personal Identity Verification (PIV) standard when identifying and issuing access rights to users of Federally-controlled facilities and/or Federal Information Systems.
USAID is applying the requirements of HSPD-12 to applicable assistance awards. USAID will begin issuing HSPD-12 "smart card" IDs to applicable recipients (and recipient employees), using a phased approach. Effective October 27, 2006, USAID will begin issuing new "smart card" IDs to new recipients (and recipient employees) requiring routine access to USAID controlled facilities and/or access to USAID's information systems. USAID will begin issuance of the new smart card IDs to existing recipients (and existing recipient employees) on October 27, 2007. (Exceptions would include those situations where an existing recipient (or recipient employee) loses or damages his/her existing ID and would need a replacement ID prior to Oct 27, 2007. In those situations, the existing recipient (or recipient employee) would need to follow the PIV processes described below, and be issued one of the new smart cards.)

Accordingly, before a recipient (including a recipient employee) may obtain a USAID ID (new or replacement) authorizing him/her routine access to USAID facilities, or logical access to USAID's information systems, the individual must provide two forms of

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

identity source documents in original form and a passport size photo. One identity source document must be a valid Federal or state government-issued picture ID. (Overseas foreign nationals must comply with the requirements of the Regional Security Office.) USAID/W recipients (and recipient employee) must contact the USAID Security Office to obtain the list of acceptable forms of documentation, and recipients working in overseas Missions must obtain the acceptable documentation list from the Regional Security Officer. Submission of these documents, and related background checks, are mandatory in order for the recipient (or employee) to receive a building access ID, and before access will be granted to any of USAID's information systems. All recipients (or employees) must physically present these two source documents for identity proofing at their USAID/W or Mission Security Briefing. The recipient (or employee) must return any issued building access ID and remote authentication token to USAID custody upon termination of the individual's employment with the recipient or completion of the award, whichever occurs first.

The recipient must comply with all applicable HSPD-12 and PIV procedures, as described above, as well as any subsequent USAID or government-wide HSPD-12 and PIV procedures/policies, including any subsequent applicable USAID General Notices, Office of Security Directives and/or Automated Directives System (ADS) policy directives and required procedures. This includes HSPD-12 procedures established in USAID/Washington and those procedures established by the

overseas Regional Security Office. In the event of inconsistencies between this clause and later issued Agency or government-wide HSPD-12 guidance, the most recent issued guidance should take precedence, unless otherwise instructed by the Agreement Officer.

The recipient is required to include this clause in any subawards (including subcontracts) that require the subawardee or subawardee employee to have routine physical access to USAID space or logical access to USAID's information systems.

[END OF STANDARD PROVISIONS]

13. PROHIBITION ON THE PROMOTION OR ADVOCACY OF THE LEGALIZATION OR PRACTICE OF PROSTITUTION OR SEX TRAFFICKING (JUNE 2005)

PROHIBITION ON THE PROMOTION OR ADVOCACY OF THE LEGALIZATION OR PRACTICE OF PROSTITUTION OR SEX TRAFFICKING (JUNE 2005)

a. The U.S. Government is opposed to prostitution and related activities, which are inherently harmful and dehumanizing, and contribute to the phenomenon of trafficking in persons. None of the funds made available under this agreement may be used to promote or advocate the legalization or practice of prostitution or sex trafficking. Nothing in the preceding sentence shall be construed to preclude the provision to individuals of palliative care, treatment, or post-exposure pharmaceutical prophylaxis, and necessary

pharmaceuticals and commodities, including test kits, condoms, and, when proven effective, microbicides.

b. Except as noted in the second sentence of this paragraph, as a condition of entering into this agreement or any subagreement, a non-governmental organization or public international organization recipient/subrecipient must have a policy explicitly opposing prostitution and sex trafficking. The following organizations are exempt from this paragraph: the Global Fund to Fight AIDS, Tuberculosis and Malaria; the World Health Organization; the International AIDS Vaccine Initiative; and any United Nations agency.

c. The following definition applies for purposes of this provision:

Sex trafficking means the recruitment, harboring, transportation, provision, or obtaining of a person for the purpose of a commercial sex act. 22 U.S.C. 7102(9).

d. The recipient shall insert this provision, which is a standard provision, in all subagreements.

e. This provision includes express terms and conditions of the agreement and any violation of it shall be grounds for unilateral termination of the agreement by USAID prior to the end of its term.

[END OF PROVISION]

Attachment D

DETAILED IMPLEMENTATION PLAN

To be submitted post award for CTO approval.

MODIFICATION OF ASSISTANCE

1. MODIFICATION NUMBER	2. EFFECTIVE DATE OF MODIFICATION	3. AWARD NUMBER:	4. EFFECTIVE DATE OF AWARD :
03	September 28, 2011	AEG-A-00-08-00009	09/30/2008

5. GRANTEE:

Arcadia Biosciences, Inc.
202 Cousteau Place, Suite 105
Davis, CA 95618

6. ADMINISTERED BY:

U.S. Agency for International Development
Office of Acquisition and Assistance
M/OAA/BFS - SA-44
1300 Pennsylvania Avenue, NW
Washington, DC 20523

DUNS NO.: 135964760
TIN NO.: 81-0571538 **LOC NO.**: N/A

7. FISCAL DATA: **Amount Obligated**:

Budget Fiscal Year: See Fiscal Data on page 2
Operating Unit:
Strategic Objective:
Team/Division:
Benefiting Geo Area:
Object Class:

8. TECHNICAL OFFICE:

USAID, BFS, Saharah Moon Chapotin, AOTR

9. PAYMENT OFFICE:

US Agency for International Development
Office of Financial Management, SA-44
1300 Pennsylvania Ave., NW
Washington, DC 20523
obldocCMP@usaid.gov

10. FUNDING SUMMARY:

	Obligated Amount	Total Est. Amt.
Amount Prior to this Modification:	$ 3,381,056.00	$ 3,631,056.00
Change Made by this Modification:	$ 750,000.00	$ 4,544,331.00
New/Current Total:	$ 4,131,056.00	$ 8,175,387.00

11. DESCRIPTION OF MODIFICATION:

The purposes of this Modification are to:

1. Extend the period of performance by 5 years from September 29, 2011 through September 30, 2016;
2. Provide $750,000 in incremental funding as identified on page 2;
3. Increase the Total Estimated Amount and Total Obligated Amount by $4,544,331 from $3,631,056 to $8,175,387 as shown in block 10 of this modification; and
4. Revise the budget; and
5. Provide Additional Program Description as Attachment I.

See page 2 and attachment for items 3, 4 and 5 listed above.

12. THIS MODIFICATION IS ENTERED INTO PURSUANT TO THE AUTHORITY OF THE FOREIGN ASSISTANCE ACT OF 1961 AS AMENDED. EXCEPT AS SPECIFICALLY HEREIN AMENDED, ALL TERMS AND CONDITIONS OF THE GRANT REFERENCED IN BLOCK #3 ABOVE, AS IT MAY HAVE HERETOFORE BEEN AMENDED, REMAIN UNCHANGED AND IN FULL FORCE AND EFFECT.

13. GRANTEE x IS o IS NOT REQUIRED TO SIGN THIS DOCUMENT TO RECONFIRM ITS AGREEMENT WITH THE CHANGES EFFECTED HEREIN

14. GRANTEE: Arcadia Biosciences, Inc.

BY: /s/ Eric J. Rey
Eric J. Rey
(Name Typed or Printed)
TITLE: President & CEO
DATE: 09/30/2011

15. THE UNITED STATES OF AMERICA

U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT

BY: /s/ Natalie J. Thunberg
Natalie J. Thunberg
(Name Typed or Printed)
TITLE: Agreement Officer
DATE: 09/30/2011

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

3. Fiscal Data

REQM-BFS-11-000063
BBFY: 2011 EBFY: 2012 Fund: DV-GFSI OP: BFS/ART
Prog Area: A18 Dist Code: BFS-CRC Prog Elem: A074
Team/Div: M/MPBP BGA: 997 SOC: 4100201

Funded: $750,000.00

4. BUDGET

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Total
India*	**$ 1,000,000**	**$ 1,410,255**	**$ 970,801**	**$ 250,000**					**$ 3,631,056**
Indonesia				**$ 255,012**	**$ 324,473**	**$ 103,440**	**$ 97,474**	**$ 0**	**$ 780,400**
GHG				$ 33,507	$ 185,255	$ 41,505	$ 50,279	$ 0	$ 310,546
NUE				$ 61,410	$ 106,375	$ 46,000	$ 46,000	$ 0	$ 259,785
Capacity									
Building				$ 160,094	$ 32,843	$ 15,935	$ 1,196	$ 0	$ 210,068
Bangladesh				**$ 497,805**	**$ 870,322**	**$ 644,558**	**$ 400,198**	**$ 82,263**	**$ 2,495,146**
Salt II				$ 497,805	$ 535,595	$ 529,656	$ 288,228	$ 72,957	$ 1,924,240
GHG				$ 0	$ 223,126	$ 79,376	$ 79,376	$ 0	$ 381,877
Capacity									
Building				$ 0	$ 111,602	$ 35,526	$ 32,595	$ 9,306	$ 189,029

Arcadia**				**$ 115,580**	**$ 464,761**	**$ 454,535**	**$ 174,768**	**$ 59,142**	**$ 1,268,785**			
NHX Protein												
Safety				$ 0	$ 325,353	$ 313,035	$ 31,146	$ 0	$ 669,534			
GHG oversight				$ 86,665	$ 110,059	$ 111,710	$ 113,386	$ 28,452	$ 450,272			
Management				$ 28,915	$ 29,349	$ 29,789	$ 30,236	$ 30,690	$ 148,979			
Total	**$ 1,000,000**	**$ 1,410,255**	**$ 970,801**	**$ 1,118,397**	**$ 1,659,556**	**$ 1,202,533**	**$ 672,440**	**$ 141,405**	**$ 8,175,387**			
Arcadia Cost Share	$ 6,047,597	$ 5,066,146	$ 5,503,502	$ 6,360,000	$ 6,360,000	$ 6,360,000	$ 6,360,000	$ 6,360,000	$ 48,417,245			

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

Attachment I
Additional Program Description
Accelerating Development of Abiotic Stress Tolerant Rice and Wheat

BUILDING ON THE INITIAL GRANT

The goal of this grant has been to develop and test in India high yielding varieties of rice and wheat with increased Nitrogen Use Efficiency (NUE), Water Use Efficiency (WUE) and salt tolerance (NHX). In collaboration with Mahyco, we have made significant progress towards this goal. […*…] These are all commercial quality events, thus positioning these lines for advancement through the Indian regulatory system. […*…]

Arcadia Biosciences and Mahyco have entered into commercial agreements to continue the development of these technologies for a number of Asian markets. This played a catalytic role in advancing the commercial development of these products — defraying some of the risk in bringing a transgenic rice and wheat forward in light of significant market uncertainties and accelerating the timeframe for commercial introduction. Through the continued commercial investment by both Arcadia and Mahyco, […*…] The only funding sought related to the continued advancement of these products is the analysis of the protein safety for the NHX salt tolerance product. This will provide the partner countries with experience in generating food safety data and expanding their knowledge of product development beyond the transformation and field-testing steps familiar to public researchers. Gaining experience with the type of data generated to demonstrate food safety will also strengthen host country capacity related to regulatory reviews and implementation.

Building on the success of the first grant, Arcadia proposes to expand the collaboration to include public sector research institutions in Bangladesh and Indonesia. The goals are to accelerate the commercial introduction of transgenic rice, to advance the development of second-generation salt tolerance traits that can be used in combination with the existing technologies under development, and to strengthen a range of skills among public sector research institutions in transgenic crop development. Thus there is both a global component to the proposed extension — beginning regulatory work on NUE and new salt tolerance trait development — and country-specific components that include capacity building of the public sector. Both rice and wheat remain the primary targets for salt tolerant trait development. Given that the work proposed here is still in the research phase rather than product development, we will focus on screening targets in rice initially.

The additional genes that we will test for salt tolerance, outlined later in the proposal, are, to the best of our knowledge, in the public domain. BRRI will be free to commercialize any of the proposed technologies and Arcadia will make available materials from those genes available to BRRI. Those materials could include a non-proprietary selectable marker. […*…] Should BRRI have an interest in commercializing a rice event with the selectable marker, Arcadia would like to be consulted to ensure that regulatory and stewardship concerns are adequately addressed. Should any new intellectual property be developed in the course of this collaboration, Arcadia will provide BRRI with commercial rights in Bangladesh as well.

After the launch of the initial grant, Arcadia Biosciences and the International Rice Research Institute (IRRI) established a collaboration to measure the greenhouse gas emissions from rice and wheat production. Agriculture is the second largest industrial sector in terms of greenhouse gas emissions. Nitrous oxide, a product of fertilizer, is three hundred times more potent a greenhouse gas than carbon dioxide. Globally, the annual manufacturing and use of fertilizer just in rice production emits an estimated

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

100 million metric tons of carbon dioxide equivalent. The greenhouse gas measurement program in India under the first grant is providing a baseline for comparison against the potential carbon footprint of NUE crops versus current production practices. This research has also enabled the comparison of different sampling and measurement techniques. Finally, along with data from Arcadia collaborators in China, the data from the first phase is being applied to the development of a methodology that we intend to register with the Clean Development Mechanism (CDM). This would pave the way for projects to access Certified Emissions Reduction credits under the CDM or carbon offsets on voluntary carbon markets.

Also included in this extension are the completion of activities that were deferred from the timeline of the first grant per the request of USAID/Washington. Those are outlined briefly and included in the budget ($250,000). Further detail is available in the first proposal and work plans.

GOALS

Accelerating the Path for Technology Introduction

Rice and wheat productivity gains in Asia through the Green Revolution played a central role in advancing food security, both through increasing the availability of these staple foods and through increasing small farmer incomes. As we look at the remaining global challenge of food security, South Asia remains a center of attention, representing the largest number of food insecure people in the world, and sustainable productivity gains in rice and wheat remain critical components of the solution. Arcadia technologies offer tools to increase productivity of these crops, particularly in light of increasing resource constraints and climate change.

Nitrogen fertilizer drives crop productivity. While adoption levels in Asia are high, they come at significant costs in the form of government subsidies and environmental impacts including water contamination and greenhouse gas emissions. As outlined in the first grant, Arcadia's NUE technology represents a significant opportunity to improve both crop productivity and environmental sustainability. Through a combination of climate change and growth in urban and industrials sectors, water resources in Asia are under growing constraint. Development of drought and water stress tolerance crops will be important to sustaining yields and particularly critical in the case of rice where a shift towards reduced flooding and even direct seeded rice is underway. Through our commercial partnership, Arcadia and Mahyco are committed to the continued development of these technologies for commercialization in Asia.

The potential value of these traits to farmers in Asia are substantial. […*…]

To accelerate the introduction of these technologies, we will begin development of the regulatory work that is common across all countries and initiate collaborations in Bangladesh and Indonesia. Increasing the familiarity among the scientists and policy makers who will determine the path for transgenic crop introduction will build the foundation for introduction of NUE and WUE rice and wheat. As we have seen in India, the commercialization of transgenic food crops such as brinjal has been more difficult than predicted and commercialization of transgenic rice in China has stalled due to opposition to biotechnology. As the timeline stretches out the number of years before a GM product reaches the market, it significantly increases the risk to commercial companies. By initiating collaborations with public research institutions in two important markets outside of India, Arcadia will enhance the technical expertise and understanding of transgenic rice among the scientists, regulators, and policy makers who will play leading roles in making decisions about the commercialization of the technologies funded under the current grant.

Bangladesh and Indonesia represent a strategic overlap in the goals of both Arcadia and USAID. As one of the major food security focus countries for the U.S. government's food security initiative, Bangladesh is also likely one of the first markets for commercialization of the current generation of Arcadia technologies for NUE, WUE, and salt. Importantly, Bangladesh provides a valuable real world environment for testing salt tolerance traits in rice. Much of the academic research on salt tolerance has been with simulating conditions that likely do not replicate the type of salt stresses experienced in farmers' fields. […*…] A collaboration with the Bangladesh Rice Research Institute will allow us to harness BRRI's expertise in testing rice under natural salt stress to more accurately screen for commercially viable levels of salt tolerance.

While Indonesia is not a food security focus country, an estimated 87 million people remain food insecure and rice prices impact this number. Climate change models predict decreases in rice harvests due to changes in rainfall patterns, pointing to the need to increase the drought tolerance of rice and deploy other technologies to sustain yields. As an important member of ASEAN, Indonesia is a likely leader in the advancement of transgenic crops within South East Asia. Indeed it was the leadership of Indonesian scientists to reach out to Arcadia following a presentation at an APEC meeting that sparked our proposed collaboration. The proposed partner, the Indonesian Center for Agricultural Biotechnology and Genetic Resources Research and Development (ICABIOGRAD), plays a central role in evaluating transgenic crop applications under the Indonesian regulatory system. Collaborative research between Arcadia and ICABIOGRAD will allow field evaluations that will accelerate introduction of NUE rice.

Salinity Constraints — Global & Bangladesh

Globally, an estimated $15-20 billion in crop yields are lost annually due to salinity. Irrigation is the primary source of salinization outside of coastal production areas and thus salinity is a significant factor in some of the most important crop production systems, from the U.S., Argentina, and Australia in the developed world, to India, Pakistan, Egypt, Ethiopia and South Africa where intensification of agriculture is central to food security. Breeding for salt tolerance in crops has shown that it is a complex trait, involving several different physiological mechanisms, from regulation of uptake, osmotic adjustments that regulate sodium concentrations, to compartmentalization within the plant and within cells. […*…] A fuller discussion of potential candidate genes is provided below.

Salinity impacts crop productivity on an estimated 1 million hectares along the coastal areas of Bangladesh, where salt water intrusion is a growing problem. An estimated 53 percent of the coastal areas are affected by salinity. Salinity is particularly acute during the dry season, when it becomes the largest constraint to productivity of rice and wheat. The lack of fresh water flushing from rivers during the dry season and the concentration of salts on soil surfaces through evaporation account for the rise of salinity build up during the dry season. Tidal flooding during the wet season further expands the problem in coastal areas. In addition to the direct impact of salinity of plant growth, saline soils also show high levels of nutrient deficiency. Research on wheat in Bangladesh demonstrated that the uptake of nitrogen was lower in salt-affected soils.

Under current conditions, average rice yields in salt affected areas of Bangladesh are estimated at 2.5 to 3.0 tons per hectare. […*…]

Researchers in Bangladesh have increased attention to development of salt tolerant crops and agricultural management practices to reduce soil salinity levels. The Bangladesh Rice Research Institute's release of a salt tolerant variety, BRRI Dhan 47, in recent years represent an advancement in tackling this problem and demonstrates BRRI's capacity to screen for salt tolerance in the field. It is this field expertise and the ability to test for tolerance under real soil and irrigation conditions that is makes BRRI and attractive research partner to Arcadia in developing a second generation of salt genes for

application in rice and wheat. Interestingly, researchers at the University of Dhaka and Jahangirnagar University, have also shown that transformation of rice with the NHX gene increases salt tolerance. This is the same technology Arcadia and Mahyco are advancing commercially under the current grant.

Reducing Greenhouse Gas Emissions

Both Bangladesh and Indonesia are key countries for USAID's global climate change program. We propose to extend the baseline measurement of greenhouse gases (GHG) to include these two countries. In the case of Bangladesh, this will be lead by IRRI and linked to the CSISA program. We will also collaborate with the International Fertilizer Development Center to measure the impact of Urea Deep Placement (UDP) on greenhouse gas emissions and look for synergies between Arcadia's NUE technology and UDP as tools for mitigating greenhouse gas emissions. In the future, when NUE rice and wheat are introduced to Bangladesh, it is possible that the combination of UDP and NUE provide a strategic policy opportunity to reducing the heavy drain that fertilizer subsidies have on the government's agricultural budget.

In Indonesia, ICABIOGRAD will collaborate with the Indonesian Center for Land Resources Research and Climate Change, also part of the Ministry of Agriculture, to conduct greenhouse gas emissions. Arcadia has japonica varieties of rice that have been transformed with NUE. As tropical varieties of japonica are produced in Indonesia, the field trials of these will provide one of the first opportunities to measure greenhouse gas emissions directly on NUE rice and compare the carbon footprint to current agricultural practices.

TECHNICAL OBJECTIVES & SPECIFIC ACTIVITIES

Activities Deferred

These include the following: (more detail is provided in the original work plan)

- […*…]
- […*…]
- […*…]

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

Strengthening Local Capacity — Bangladesh & Indonesia

To increase local technical capacity and to support decision-making about the safety of transgenic rice, Arcadia will host researchers from each of the target countries. This will also provide the opportunity to expose public sector institutions to how industry approaches product development versus research. Training could include cloning and construction of vectors, molecular characterization of gene inserts, rice transformation, protocols for greenhouse screening and event selection, and field trail design. Arcadia is conducting rice transgenic trials in California, offering an opportunity to provide training in both the product development and biosafety components of conducting field trials in the private sector.

Additional valuable training will be provided in the area of biosafety, allowing public researchers to build the knowledge and skills required to take a transgenic crop through regulatory systems. This component will be coordinated with USAID's biosafety programs currently working in both countries. Arcadia is one of only a handful of institutions in the U.S. that is participating in the USDA's Biotechnology Quality Management System (BQMS). This USDA-initiated program aims to enhance quality stewardship of transgenic crops throughout the research and product development cycles based on standard quality management principles. Arcadia's regulatory team will provide training in quality management systems to both ICABIOGRAD and BRRI to strengthen the stewardship of these public research institutions to ensure the safe management of these regulated crops. In addition, we will provide the opportunity for researchers to learn how to conduct the initial food safety assessment of transgenic protein products, working with Arcadia's regulatory and analytical teams. This knowledge will also strengthen the role of these researchers in informing national biosafety review committees. The proposed protein safety studies are required by CODEX and by all countries (namely, stability and digestibility) and will be done on the NHX salt tolerance gene under development in the first grant as the life of the extension will not span this stage of development for the additional salt gene targets.

The length and type of training will be determined jointly by BRRI (Bangladesh), ICABIOGRAD (Indonesia), and Arcadia to ensure we address the priorities and capacities of the partners. We could host scientists for six to twelve months each for training in the cloning, transformation, molecular characterization and greenhouse screening, with shorter visits to Arcadia laboratories for training in areas such as quality management systems and initial food safety assessment. Over the life of the grant, this would provide the opportunity for a number of sequential visiting scientists, and with placements at our laboratories in Davis, California and Seattle, Washington.

As field evaluation of candidate genes is central to the collaboration with BRRI in Bangladesh, we propose to fund some infrastructure and additional training to ensure trials are conducted under biosafety containment conditions at one or two BRRI field stations in the coastal areas. This may include security fencing for a portion of the experiment station fields to control access to the field, guards, and additional field space to provide for required separation distances from other rice production plots. While Arcadia will provide training of lead scientists at our facilities, we propose to hire short-term consultants, in consultation with USAID's biosafety programs, to provide field-based training of staff who will manage the field trials in Bangladesh and to inspect the field trials for compliance with safety measures.

Identification of Additional Salt Tolerance Genes

Genetic engineering of salt tolerant rice shows considerable promise, […*…]

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

Should any new intellectual property be developed as a result of this collaboration, Arcadia will likewise provide BRRI the right to commercialize that technology(ies) in Bangladesh.

[…*…]

Conducting Initial Food Safety Assessment

CODEX outlines the data needed for the initial assessment of food safety of new biotechnology products and these standards have been the basis for the draft food safety guidelines in Bangladesh. While most of the data are dependent on a specific transgenic event, a portion is focused on the transgene itself. Sought here are the funds to pursue the protein safety analysis for the NHX salt tolerance gene. It is expected that the new targets identified in the research outlined above will be stacked in combination with NHX to give robust salt tolerance. As such, engaging Bangladeshi scientists in this work on NHX will build their familiarity with this first component of the food safety assessment. As Bangladesh has recently drafted new food safety guidelines, providing experience with how the data is generated will be timely in

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

providing one of the first tangible products by which to understand implementation of these new guidelines.

The initial food safety assessment requires that the protein be purified, preferably isolated from the plant or alternatively from a bacterial host. Because NHX is a transmembrane antiporter, the inherent process of purifying a membrane-bound protein is substantial. The proposed approach is discussed later.

The safety assessment process includes:

1. Description of the recombinant-DNA plant;
2. Description of the host plant and it's use as a food;
3. Description of the donor organism(s);
4. Description of the genetic modification(s);
5. Characterization of the genetic modification(s);
6. Safety assessment of the protein product;
7. Other considerations.

The timeline and employee investment to complete the above process is discussed in the project management section. In total, it takes […*…] to complete the process, including time to optimize expression and purification of the protein to conduct the experiments that characterize the transgenic product, independent of the plant.

[…*…]

[…*…]

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

This is included in Arcadia's cost-share contribution to the partnership.

Field Trails of NUE Rice in Indonesia

Lead by ICABIOGRAD, we will conduct field trials of NUE rice in Indonesia to both look at performance, to provide training in field evaluation of the trait, and as the basis for measuring differences in greenhouse gas emissions. Arcadia will make available NUE japonica rice on a research basis. ICABIOGRAD will cross this into locally adapted japonica rice (javonica) on a research basis for evaluation in both the greenhouse and field, all under biosafety regulation. Arcadia has already licensed this technology to a commercial partner for Asian markets including Indonesia, thus the avenue for introduction will be through private seed companies. But, by making this technology available to ICABIOGRAD for research, they will gain additional familiarity and collect data that will speed the commercial introduction. ICABIOGRAD currently tests all GM crop material as part of the Indonesian government's regulatory procedures. In addition, as outlined below, these field trials will provide the opportunity to conduct GHG measurements that compare NUE rice to conventional rice and fertilizer application systems.

Greenhouse Gas Emissions

The results of the research conducted in India under the first grant will lead to the standardization of methodologies and analysis of data for GHG emissions. […*…]

It is expected that this baseline work will provide the basis for recommendations on alternative policies and production practices and technologies to reduce GHG emissions from rice production. Through links to CSISA and IFPRI in Bangladesh, and the Ministry of Agriculture in Indonesia, we will explore how to promote such policy and production changes.

In Bangladesh, this component will be lead by IRRI as part of the CSISA platforms with additional collaboration with IFDC on UDP. In Indonesia, this will be lead by a local institution, the Indonesian Center for Land Resources Research and Climate Change, with training by Arcadia. To ensure

coordination and training across the work being conducted in India, Bangladesh, and Indonesia, Arcadia will hire a post-doctoral fellow to provide technical support and oversight.

PROGRAM MANAGEMENT

A program committee will be established with 1-2 representatives from each of the partner institutions. The program committee will serve to make decisions about the program and to coordinate implementation. The committee will hold meetings quarterly to discuss work plan development and implementation and share technical progress. It is expected that the committee will meet in person at least once a year with the other meetings being arranged by conference call. From Arcadia, the representatives will be […*…] the lead on new salt gene identification, and a post-doctoral fellow who will oversee the greenhouse gas emissions component.

As the grantee to USAID, Arcadia Biosciences will be responsible for reporting to USAID and will ensure both country-specific reporting as well as progress on global activities undertaken by Arcadia and its partners.

REFERENCES

Apse, M.P., G.S. Aharon, W.A. Snedden, andE. Blumwald. 1999. Salt tolerance conferred by overexpression of a vacuolar Na^+/H^+ antiporter in Arabidopsis. Science 285: 1256-1258.

Abrol, I.P., J.S.P. Yadav, and F.I. Massoud. 1988. FAO Soils Bulletin 39. http://www.fao.org/docrep/x5871e/x5871e03.htm

Flowers, T.J. and S.A. Flowers. 2005. Why does salinity pose such a difficult problem for plant breeders. Agricultural Water Management 78: 15-24.

Kalifa, Y., Perlson, E., Gilad, A., Konrad, Z., Scolnik, P. A., & Bar-zvi, D. (2004). Over-expression of the water and salt stress-regulated Asr1 gene confers an increased salt tolerance. *Plant, Cell and Environment, 27*, 1459-1468.

Gaxiola, R. A., Li, J., Undurraga, S., Dang, V., Allen, G. J., Alper, S. L., et al. (2001). Drought- and salt-tolerant plants result from overexpression of the AVP1 H+ -pump. *PNAS, 98*, 11444-11449.

Good, A.G., S.J. Johnson, M.D. DePauw, R.T. Carroll, N. Savidov, J. Vidamir, Z. Lu, G. Taylor, and V. Stroeher. 2007. Engineering nitrogen use efficiency with alanine amino transferace. Can. J. Bot. 85: 52-62.

Haque, S.A. 2006. Salinity Problems and Crop Production in Coastal Areas of Bangaldesh. Pak. J. Bot., 38(5): 1359-1365.

Hoshida, H., Tanaka, Y., Hibino, T., Hayashi, Y., Tanaka, A., Takabe, Tetsuko, et al. (2000). Enhanced tolerance to salt stress in transgenic rice that overexpresses chloroplast glutamine synthetase. *Plant Mol. Biol., 43*, 103-111.

Islam, S.M.T, R.S. Tammi, S.L. Singla-Pareek, and Z. I. Seraj. 2010. Enhanced salinity tolerance an improved yield properties in Bangladesh rice *Binnotoa* through *Agrobacterium*-mediated transformation of PgNHX1 from *Pennisetum* glaucum. ACTA Physilogia Plantarum 34(4): 657-663.

Kalifa, Y., Perlson, E., Gilad, A., Konrad, Z., Scolnik, P. A., & Bar-zvi, D. (2004). Over-expression of the water and salt stress-regulated Asr1 gene confers an increased salt tolerance. *Plant, Cell and Environment*, *27*, 1459-1468.

Lu, Z., Liu, D., & Liu, S. (2007). Two rice cytosolic ascorbate peroxidases differentially improve salt tolerance in transgenic Arabidopsis. *Plant Cell Reports*, *26*(10), 1909-17. Springer Berlin / Heidelberg. doi: 10.1007/s00299-007-0395-7.

Majee, M., Maitra, S., Dastidar, K. G., Pattnaik, S., Chatterjee, A., Hait, N. C., et al. (2004). A novel salt-tolerant L-myo-inositol-1-phosphate synthase from Porteresia coarctata (Roxb.) Tateoka, a halophytic wild rice: molecular cloning, bacterial overexpression, characterization, and functional introgression into tobacco-conferring salt tolerance. *JBC*, *279*(27), 28539-52. doi: 10.1074/jbc.M310138200.

Ogawa, D., Yamaguchi, K., & Nishiuchi, T. (2007). High-level overexpression of the Arabidopsis HsfA2 gene confers not only increased themotolerance but also salt/osmotic stress tolerance and enhanced callus growth. *Journal of experimental botany, 58*(12), 3373-83. doi: 10.1093/jxb/erm184.

Rahman, S.M., M.I. Khalil, and M.F. Ahmed. 1994. Yield-water relations and nitrogen utilization by wheat in salt-affected soils in Bangladesh. Agricultural Water Management 28(1): 49-56.

Rivero, R.M., Kojima, M., Gepstein, A., Sakakibara, H., Mittler, Rl, Gepstein, S., and Blumwald, E. 2007. Delayed leaf senescence induces extreme drought tolerance in a flowing plant. PNAS 104: 19631-19636.

Sade, N., Gebretsadik, M., Seligmann, R., Schwartz, A., Wallach, R., & Moshelion, M. (2010). The Role of Tobacco Aquaporin1 in Improving Water Use Efficiency , Hydraulic Conductivity , and Yield Production Under Salt Stress. *Plant Physiol.*, *152*(January), 245-254. doi: 10.1104/pp.109.145854.

Salam, M.A., M.A. Rahman, M.A.R. Bhuiyan, K. Uddin, M.R.A. Sarker, R. Yasmeen, and M.S. Rhaman. 2007. BRRI dhan 47: a salt-tolerant variety for the boro season. Interntaional Rice Research Notes 32(1): 42-43.

Sharawat, A.K., R.T. Carroll, M. DePauw, G.T. Taylor, and A.G. Good. 2008. Genetic engineering of improved nitrogen use efficiency in rice by the tissue-specific expression of alanine aminotransferase. Plant Biotech. J. 6: 722-732.

Shi, W., Muramotoa, Y., Uedaa, A., & Takabe, T. (2001). Cloning of peroxisomal ascorbate peroxidase gene from barley and enhanced thermotolerance by overexpressing in Arabidopsis thaliana. *Gene*, *273*(1), 23-27. doi: 10.1016/S0378-1119(01)00566-2.

Uddin, I., Qi, Y., Yamada, S., Shibuya, I., Deng, X.-ping, Kwak, S.-soo, et al. (2008). Overexpression of a New Rice Vacuolar Antiporter Regulating Protein OsARP Improves Salt Tolerance in Tobacco. *Plant Cell Physiol.*, *49*(6), 880-890. doi: 10.1093/pcp/pcn062.

Xu, D., Duan, X., Wang, B., Hong, B., Ho, T.-hua D., & Wu, R. (1996). Expression of a late Embryogenesis Abundant Protein Cene , HVA1 , from Barley Confers Tolerance to Water Deficit and Salt Stress in Transgenic Rice ’. *Plant Physiol.*, *110*, 249-257.

Zhang, H.X. and E. Blumwald. 2001. Transgenic salt-tolerant tomtato plants accumulate salt in foliage but not in fruit. Nature Biotechnology 19: 765-768.

Zhifang, G., & Loescher, W. (2003). Expression of a celery mannose 6-phosphate reductase in Arabidopsis thaliana enhances salt tolerance and induces biosynthesis of both mannitol and a glucosyl-mannitol dimer. *Plant, Cell and Environment*, *26*, 275-283.

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

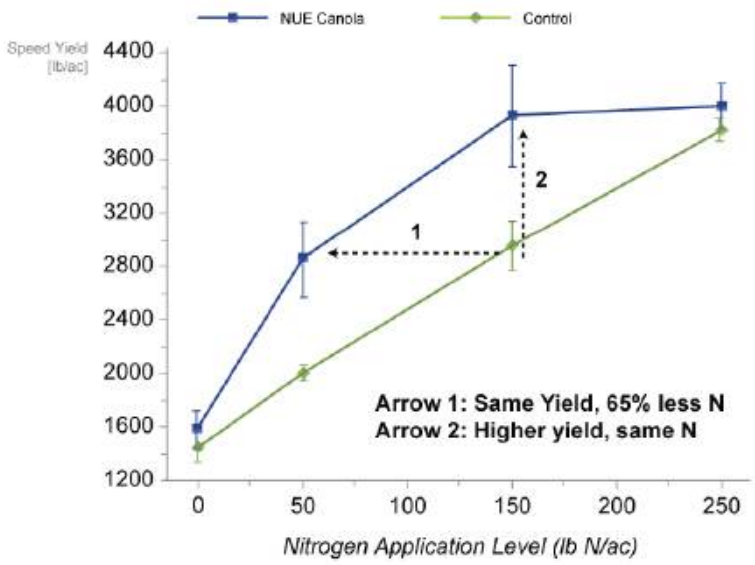
Annex

Description of NUE, WUE, and Salt Tolerance Technologies under Development from the Initial USAID Grant

Nitrogen Use Efficiency (NUE)

The NUE technology developed at Arcadia is based on modulating the expression of an aminotransferase gene. Aminotransferases are integral to N assimilation for the production of amino acids and N allocation in plants. Alanine aminotransferase enzymes catalyze the reversible formation of alanine and 2-oxoglutarate from glutamate and pyruvate. Increased NUE in transgenic plants expressing an alanine aminotransferase (AlaAT) from barley under the control of a stress-inducible promoter from the canola turgor-responsive gene (btg26) was first demonstrated in canola (Good et aI., 2007). Arcadia’s NUE technology enables plants to absorb and utilize nitrogen fertilizer much more efficiently than their non-transgenic controls. This results in the same high yields as conventional crops while using half as much nitrogen fertilizer, or higher yields if using the same amount of fertilizer. In either case, less nitrogen escapes into the water and air.

Canola expressing btg-AlaAT has been extensively field tested for NUE by Arcadia since 2002. This work has progressed over 7 field seasons in the Imperial Valley of California and throughout the upper Midwestern United States. Typical results from application of urea fertilizer are shown below. Similar seed yields were achieved in the transgenic line using 66% less nitrogen than the control. In addition, seed yield was increased in the transgenic line by as much as 33% over the control at conventionally applied nitrogen levels.



Extensive analyses on btg-AlaAT transgenic canola plants and seeds did not show any significant compositional differences at maturity. The plants showed no differences in nitrogen, phosphorus or potassium content. In addition, the seeds contained no differences in moisture content, size, protein content, amino acid composition, oil percentage or fatty acid composition. In addition to demonstrated field success in canola, Arcadia has shown similar NUE results in several varieties of japonica rice, wheat, and sugar beets. In rice, AlaAT is expressed under the control of the rice homologue of the btg related promoter OsAnt1. Both greenhouse and field trial results from California have shown increases in seed yield, panicle number and biomass in the transgenic lines as compared to controls under various nitrogen treatment. Additional field trials are underway this summer in California. The figure on the left below shows NUE rice versus wild type controls. The figure on the right shows the grain yield differences of the transgenic lines NUE rice as compared to the two types of controls under different applied nitrogen rates.

These data are consistent with data published by Shrawat et al (2008).

Salt Tolerance Technology (NHX)

Arcadia's salinity-tolerance technology is based on the overexpression of plant vacuolar Na+/H+

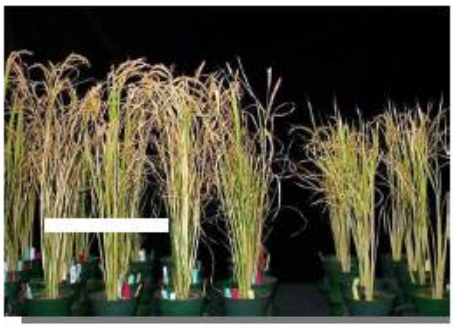
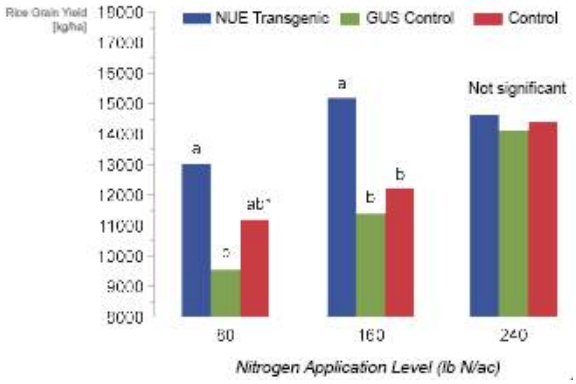


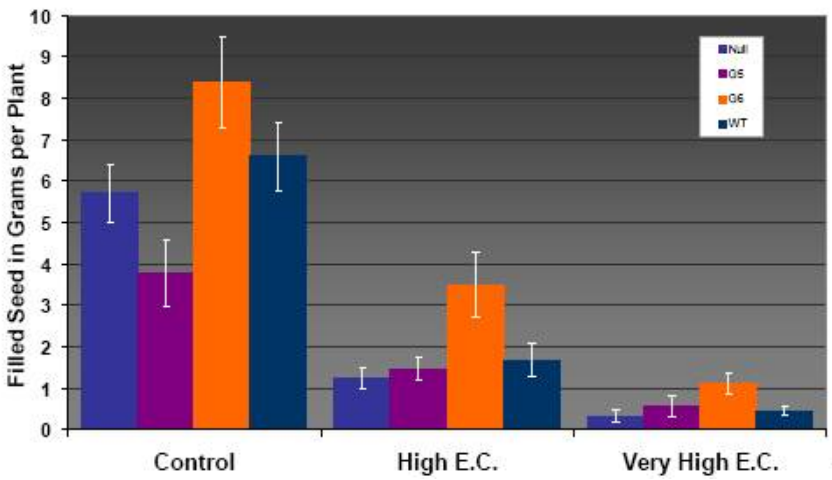
Fig. 3A



antiporter(s) (NHXs) (Apse et aI., 1999, Zhang and Blumwald, 2001). NHX overexpression promotes the sequestering of sodium ions into the vacuoles of the cells, where it is not toxic and contributes favorably to the osmotic balance of the cells and plant tissues. This strategy, which is based on the characteristic high activity of vacuolar NHX activity observed in salt tolerant halophytes, promotes the tolerance of shoot tissues to sodium. There is also evidence that the overexpression of NHX in roots promotes K+ homeostasis under saline conditions. It permits the growth and production of seed under salinity stress levels that would otherwise have a negative impact on yield. Arcadia's salt-tolerance technology can improve farming efficiencies and reduce the need to expand agricultural activities into new areas. In addition, this technology can reduce the need for fresh water by allowing increased use of lower quality (brackish) water.

Arcadia's salinity tolerance technology has been demonstrated in multiple model and agricultural crops, including Arabidopsis, tomato, canola, wheat, cotton and rice. The technology has been validated by many academic researchers (Fukuda et aL, 2004, Verma et aL, 2007, and references therein). Arcadia has tested transgenic rice events in field tests in California. On chronic exposure to high salinity stress (E.C.w=6.7), independent transgenic rice lines over-expressing AtNHX1 (G5 and G6) retained 40% of their yield, while the controls (Null and WT) retained only 20%.

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.



There are encouraging results published in the literature for wheat reported by Xue et al (2004) using NHX overexpression in wheat in laboratory and field tests and by Islam et al (2010) for rice in the greenhouse.

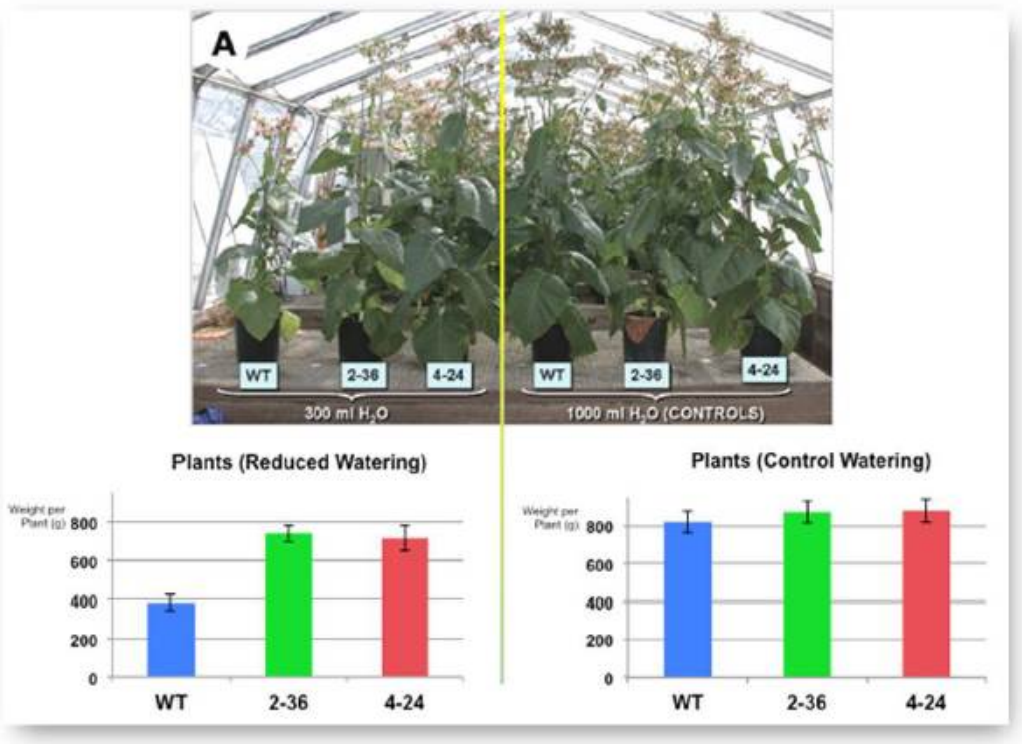
Water Use Efficiency (WUE)

The WUE technology being developed at Arcadia is based on the production of cytokinins under stress conditions. This approach has been shown in tobacco to be effective at preserving yields under chronic deficit irrigation and at mitigating yield loss under extended periods of soil drying. The transgenic construct (pSARK-IPT) contains a maturation-induced promoter (SARK) that controls the expression of isopentenyltransferase (IPT), which is the rate-limiting enzyme in cytokinin biosynthesis. Plants typically respond to water stress by reducing transpiration. Initially this will induce stomatal closing. Senescence and abscission of leaves for the recovery of nitrogen and photoassimilates and the reduction of canopy size are typical adaptive responses which allow plants to set seed under prolonged or severe stress. However, the yield is greatly reduced. In crop plants, a severe yield reduction is considered crop failure. Better control over senescence initiation provides protection against yield losses in pSARK-1PT transgenic plants subjected to limiting water conditions.

This technology has been successfully tested in tobacco, both in greenhouse (Rivero et aI., 2007) and under field conditions. Field trials in rice are currently underway in California. Rivero et al. (2007) reported that the pSARK-IPT transgenic tobacco recovered from extreme drought. Biomass and seed yields from wild type plants were dramatically reduced (due to senescence and leaf death), while the transgenic plants recovered from wilting and continued to complete their life cycle with good seed yields.

In separate experiments in which plants were watered regularly but at reduced rates, the transgenic pSARK-IPT lines lost only 10% in biomass and seed yield, while the wild type controls suffered a 60% loss. The response of the transgenic tobacco to these greenhouse treatments suggests that the technology is appropriate for addressing crop performance during either short term drought, which can lead to crop failure, or prolonged water stresses which reduce yields dramatically in the non- transgenic control.

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.



[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

MODIFICATION OF ASSISTANCE AWARD

1. MODIFICATION NUMBER:	2. EFFECTIVE DATE OF MODIFICATION:	3. AWARD NUMBER:	4. EFFECTIVE DATE OF AWARD:
04	See block 15	AEG-A-00-08-00009-00	09/30/2008

5. RECIPIENT:

Arcadia Biosciences, Inc.
202 Cousteau Pl., Suite 200
Davis, CA 95618

6. ADMINISTERED BY:

U.S. Agency for International Development
Office of Acquisition and Assistance
M/OAA/EGAT, Room 566-K1, SA-44
1300 Pennsylvania Avenue, NW
Washington, DC 20523

DUNS NO: 135964760
TIN NO.: 81-0571538 **LOC NO**.: N/A

7. FISCAL DATA:

See page 2

Amount Obligated:
Budget Fiscal Year:
Operating Unit:
Strategic Objective:
Team/Division:
Benefitting Geo Area:
Object Class:

8. TECHNICAL OFFICE:

BFS/ARP

9. PAYMENT OFFICE:

U.S. Agency for International Development
Office of the Chief Financial Officer
Federal Canter Plaza (SA-44)
M/CFO/CMP, 4th Floor
301 4th Street, S.W.
Weshington, DC 20547

10. FUNDING SUMMARY:

	Obligated Amount	Total Est. Amount
Amount Obligated prior to this Modification:	$ 4,131,056	$ 8,175,367
Change Made by this Modification:	$ 2,027,953	$ 0.00
New/Current Total:	$ 6,159,009	$ 8,175,387

11. DESCRIPTION OF MODIFICATION:

The purposes of this Modification are to:
1) Provide incremental funding in the amount of $2,027,953, increasing the total obligation from $4,131,056 to $6,159,009;
2) Replace the previous budget with a revised budget;
3) Update Section A.6, Indirect Cost Rates, to incorporate a ceiling rate to be used for the entirety of the award;
4) Correct several administrative details in Section A;
5) Update the Section titled Authorized Geographic Code to include the new Code 937;
6) Update the Mandatory Standard Provisions; and
7) Update the required as applicable provision entitled “Cost Sharing (Matching)”.

CONTINUED ON PAGE 2

12. THIS MODIFICATION IS ENTERED INTO PURSUANT TO THE AUTHORITY OF THE FOREIGN ASSISTANCE ACT OF 1961, AS AMENDED, EXCEPT AS SPECIFICALLY AMENDED HEREIN, ALL TERMS AND CONDITIONS OF THE AWARD REFERENCED ON BLOCK #3 ABOVE, AS IT MAY HAVE HERETOFORE BEEN AMENDED, REMAIN UNCHANGED AND IN FULL FORCE AND EFFECT.

13. RECIPIENT x IS o IS NOT REQUIRED TO SIGN THIS DOCUMENT TO RECONFIRM ITS AGREEMENT WITH THE CHANGES EFFECTED HEREIN

14. RECIPIENT:

BY: **/s/ Eric J. Rey**

Eric J. Rey
(Name Typed or Printed)

TITLE: **President & CEO**

DATE: **09/25/2012**

15. THE UNITED STATES OF AMERICA
U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT

BY: **/s/ Moncel Petitto**

Moncel Petitto
(Name Typed or Printed)

TITLE: **Agreement Officer**

DATE: **09/25/2012**

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

MODIFICATION OF ASSISTANCE AWARD
CONTINUATION PAGE

AWARD NO. AEG-A-00-08-00009-00

MODIFICATION NO. 04

11. DESCRIPTION OF MODIFICATION (CONTINUED)

Accordingly, the above-numbered award is hereby further amended as follows:

Page 3, Section A. General

1. Amount Obligated in this Action: **Delete** this line in its entirety.
2. Total Estimated USAID Amount:
   Delete $3,631,056
   Insert $8,175,387
3. Total Obligated USAID Amount:
   Delete $3,381,056
   Insert $6,159,009

Page 3, Section B. Specific

Insert the following accounting data:

REQM-BFS-12-000072

BBFY	2011
EBFY	2012
Fund	DV-GFSI
OP	BFS/ART
Prog Area	A18
Dist Code	BFS-CRC
Prog Elem	A074
BGA	997
SOC	4100302
Amount	$677,953

BBFY	2012
EBFY	2013
Fund	DV-GFSI
OP	BANGLADESH
Prog Area	A18
Dist Code	388W
Prog Elem	A074
Team/Div	BANGLADESH
BGA	388
SOC	4100301
Amount	$1,000,000

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

BBFY	2012
EBFY	2013
Fund	DV-GFSI
OP	INDONESIA
Prog Area	A18
Dist Code	497-W
Prog Elem	A074
Team/Div	RDMA/GDO
BGA	497
SOC	4100301
Amount	$350,000

Page 6, A.2 Period of Cooperative Agreement

Delete

1. "The estimated completion date of this Cooperative Agreement is 9/29/2011." in its entirety

Insert

"The estimated completion date of this Cooperative Agreement is 9/30/2016." in lieu thereof.

Delete

2. "Funds obligated hereunder are available for program expenditures for the estimated period September 30, 2008 to September 30, 2010 subject to approval of performance through September 30, 2009 (See A.3.4 below)." in its entirety.

Insert

"Funds obligated hereunder are available for program expenditures for the estimated period September 30, 2008 to September 30, 2016 subject to approval of performance through September 30, 2015 (See A.3.4 below)." in lieu thereof.

Page 6, A.3 AMOUNT OF COOPERATIVE AGREEMENT AND PAYMENT

1. The total estimated amount of this Cooperative Agreement for the period shown in A.2 above is $3,631,056.00.

Replace "$3,631,056.00" ***with*** "$8,175,387.00"

2. USAID hereby obligates the amount of $3,381,056.

Replace "$3,381,056" ***with*** "$6,159,009"

2. Page 6, A.4 COOPERATIVE AGREEMENT BUDGET

Replace the budget with the following revised budget:

Overall Budget		
India	$	3,631,056
Indonesia	$	1,037,252
Bangladesh	$	2,250,607
Core Global	$	1,256,472
Total	**$**	**8,175,387**
Arcadia Cost Share	$	6,360,000

Budget Line Items (Years 4-8)		**Totals**
Salaries Wages and Benefits	$	1,360,148
Plant Growth Facilities	$	331,333
Materials and Supplies	$	264,522
Subcontracting	$	1,070,855
Equipment	$	56,650
Travel/Per Diem	$	179,208
Core Global	$	250,000
Total Direct Costs	$	3,512,717
Overhead Indirect Cost	$	1,281,614
TOTAL COSTS:	**$**	**4,794,331**

3. Page 8, A.6 Indirect Cost Rate

Delete this section in its entirety and **Insert** the following in lieu thereof:

"Pending establishment of revised provisional or final indirect cost rates, allowable indirect costs shall be reimbursed on the basis of the following negotiated provisional or predetermined rates and the appropriate bases:

(1) Reimbursement for allowable indirect costs shall be at final negotiated rates but not in excess of the following ceiling rates:

Description	**Rate**	**Base**	**Type**	**Period**
G&A*	52.5%	(1/)	(1/)	(1/)

*G&A on subawards is limited to 15%

(1/) Base of application: Total costs incurred excluding G&A expenses
Type of Rate: Ceiling
Period: For the full Term of the Agreement, beginning 9/30/2008, including any extension(s) thereof.

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

2) The Awardee is required to provide written notification to the indirect cost negotiator prior to implementing any changes which could affect the applicability of the approved rates. Any changes in accounting practice to include changes in the method of charging a particular type of cost as direct or indirect and changes in the indirect cost allocation base or allocation methodology require the prior approval of the Office of Overhead, Special Cost and Closeout (OCC). Failure to obtain such prior written approval may result in cost disallowance.

(3) The Government shall not be obligated to pay any additional amount on account of indirect costs above the ceiling rates established in the Agreement. If the final indirect cost rates are less than the negotiated ceiling rates, the negotiated rates will be reduced to conform to the lower rates.

(4) This understanding shall not change any monetary ceiling, obligation, cost limitation, or obligation established in the Agreement."

[End of section]

4. Page 8, A.8 Authorized Geographic Code

Delete "The authorized geographic code for procurement of goods and services under this award is 000." in its entirety and
Replace with "The authorized geographic code for procurement of goods and services under this award is 937." in lieu thereof.

5. Page 5, Required as Applicable Standard Provisions for U.S. NonGovernmental Recipients

Delete "*7.* Cost Sharing (Matching) (July 2002)" in its entirety
Replace with "7. Cost Sharing (Matching) (February 2012)" in lieu thereof.

Page 72, 7.Cost Sharing (Matching)

Delete this section in its entirety and **Insert** the following in lieu thereof:

COST SHARING (MATCHING) (February 2012)

a. If at the end of any funding period, the recipient has expended an amount of non-Federal funds less than the agreed upon amount or percentage of total expenditures, the Agreement Officer may apply the difference to reduce the amount of USAID incremental funding in the following funding period. If the award has expired or has been terminated, the Agreement Officer may require the recipient to refund the difference to USAID.

b. The source and nationality requirements and the restricted goods provision established in the Standard Provision entitled "USAID Eligibility Rules for Goods and Services" do

not apply to cost sharing (matching) expenditures.

[End of provision]

Page 28, STANDARD PROVISIONS FOR U.S. NONGOVERNMENTAL RECIPIENTS, delete the **Mandatory** Standard Provisions included in the original award in its entirety and substitute with the annex No.1 to this modification.

All other terms and conditions will remain the same.

[End of Modification]

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

AEG-A-00-08-00009-00
Modification No. 4
Annex 1

MANDATORY STANDARD PROVISIONS FOR U.S. NONGOVERNMENTAL ORGANIZATIONS

M1. APPLICABILITY OF 22 CFR PART 226 (MAY 2005)

a. All provisions of 22 CFR 226 and all Standard Provisions attached to this agreement are applicable to the recipient and to subrecipients which meet the definition of "Recipient" in part 226, unless a section specifically excludes a subrecipient from coverage. The recipient must assure that subrecipients have copies of all the attached standard provisions.

b. For any subawards made with Non-U.S. subrecipients the recipient must include the applicable "Standard Provisions for Non-US Nongovernmental Organizations." Recipients are required to ensure compliance with monitoring procedures in accordance with OMB Circular A-133.

[END OF PROVISION]

M2. INELIGIBLE COUNTRIES (MAY 1986)

Unless otherwise approved by the USAID Agreement Officer, funds will only be expended for assistance to countries eligible for assistance under the Foreign Assistance Act of 1961, as amended, or under acts appropriating funds for foreign assistance.

[END OF PROVISION]

***M3. NONDISCRIMINATION (JUNE 2012)**

No U.S. citizen or legal resident shall be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination on the basis of race, color, national origin, age, disability, or sex under any program or activity funded by this award when work under the grant is performed in the U.S. or when employees are recruited from the U.S.

Additionally, USAID is committed to achieving and maintaining a diverse and representative workforce and a workplace free of discrimination. Based on law, Executive Order, and Agency policy, USAID prohibits discrimination, including harassment, in its own workplace on the basis of race, color, religion, sex (including pregnancy and gender identity), national origin, disability, age, veteran's status, sexual orientation, genetic information, marital status, parental status, political affiliation, and any other conduct that does not adversely affect the performance of the employee.

In addition, the Agency strongly encourages its recipients and their subrecipients and vendors (at all tiers), performing both in the U.S. and overseas, to develop and enforce comprehensive nondiscrimination policies for their workplaces that include protection for all their employees on these expanded bases, subject to applicable law.

[END OF PROVISION]

***M4. AMENDMENT OF AWARD (JUNE 2012)**

This award may only be amended in writing, by formal amendment or letter, signed by the Agreement Officer (AO), and in the case of a bilateral amendment, by the AO and an authorized official of the recipient.

[END OF PROVISION]

***M5. NOTICES (JUNE 2012)**

Any notice given by USAID or the recipient is sufficient only if in writing and delivered in person, mailed or e-mailed as follows:

(1) To the USAID Agreement Officer, at the address specified in this award; or

* *An asterisk indicates that the section has been revised.*

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

(2) To the recipient, at the recipient's address shown in this award, or to such other address specified in this award.

[END OF PROVISION]

***M6. SUBAGREEMENTS (JUNE 2012)**

a. Subawardees and contractors have no relationship with USAID under the terms of this award. All required USAID approvals must be directed through the recipient to USAID.

b. Notwithstanding any other term of this award, subawardees and contractors have no right to submit claims directly to USAID and USAID assumes no liability for any third party claims against the recipient.

[END OF PROVISION]

M7. OMB APPROVAL UNDER THE PAPERWORK REDUCTION ACT (DECEMBER 2003)

Information collection requirements imposed by this award are covered by OMB approval number 0412-0510; the current expiration date is 04/30/2005. The Standard Provisions containing the requirement and an estimate of the public reporting burden (including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information) are

Standard Provision	Burden Estimate
Air Travel and Transportation	1 (hour)
Ocean Shipment of Goods	.5
Patent Rights	.5
Publications	.5
Negotiated Indirect Cost Rates - (Predetermined and Provisional)	1
Voluntary Population Planning	.5
Protection of the Individual as a Research Subject	1

22 CFR 226	Burden Estimate
22 CFR 226.40-.49, Procurement of Goods and Services	1 (hour)
22 CFR 226.30 -.36, Property Standards	1.5

Comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, may be sent to the Office of Acquisition and Assistance, Policy Division (M/OAA/P), U.S. Agency for International Development, Washington, DC 20523-7801 and to the Office of Management and Budget, Paperwork Reduction Project (0412-0510), Washington, DC 20503.

[END OF PROVISION]

***M8. USAID ELIGIBILITY RULES FOR GOODS AND SERVICES (JUNE 2012)**

a. This provision is not applicable to commodities or services that the recipient provides with private funds as part of a cost-sharing requirement, or with Program Income generated under this award.

b. Ineligible and Restricted Commodities and Services:

(1) Ineligible Commodities and Services. The recipient must not, under any circumstances, procure any of the following under this award:

* *An asterisk indicates that the section has been revised.*

(i) Military equipment,
(ii) Surveillance equipment,
(iii) Commodities and services for support of police or other law enforcement activities,
(iv) Abortion equipment and services,
(v) Luxury goods and gambling equipment, or
(vi) Weather modification equipment.

(2) Ineligible Suppliers. Any firms or individuals that do not comply with the requirements in Standard Provision, "Debarment, Suspension and Other Responsibility Matters" and Standard Provision, "Preventing Terrorist Financing" must not be used to provide any commodities or services funded under this award.

(3) Restricted Commodities. The recipient must obtain prior written approval of the Agreement Officer (AO) or comply with required procedures under an applicable waiver, as provided by the AO when procuring any of the following commodities:

(i) Agricultural commodities,
(ii) Motor vehicles,
(iii) Pharmaceuticals,
(iv) Pesticides,
(v) Used equipment,
(vi) U.S. Government-owned excess property, or
(vii) Fertilizer.

c. Source and Nationality:

Except as may be specifically approved in advance by the AO, all commodities and services that will be reimbursed by USAID under this award must be from the authorized geographic code specified in this award and must meet the source and nationality requirements set forth in 22 CFR 228. If the geographic code is not specified, the authorized geographic code is 937. When the total value of procurement for commodities and services during the life of this award is valued at $250,000 or less, the authorized geographic code for procurement of all goods and services to be reimbursed under this award is code 935. For a current list of countries within each geographic code, see: http://inside.usaid.gov/ADS/300/310.pdf.

d. Guidance on the eligibility of specific commodities and services may be obtained from the AO. If USAID determines that the recipient has procured any commodities or services under this award contrary to the requirements of this provision, and has received payment for such purposes, the AO may require the recipient to refund the entire amount of the purchase.

e. This provision must be included in all subagreements, including subawards and contracts, which include procurement of commodities or services.

[END OF PROVISION]

***M9. DEBARMENT, SUSPENSION, AND OTHER RESPONSIBILITY MATTERS (JUNE 2012)**

a. The recipient agrees to notify the Agreement Officer (AO) immediately upon learning that it or any of its principals:

(1) Are presently excluded or disqualified from covered transactions by any Federal department or agency;

(2) Have been convicted within the preceding three-year period preceding this proposal; been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State,

* *An asterisk indicates that the section has been revised.*

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, tax evasion, receiving stolen property, making false claims, or obstruction of justice; commission of any other offense indicating a lack of business integrity or business honesty that seriously and directly affects your present responsibility;

(3) Are presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State, or local) with commission of any of the offenses enumerated in paragraph a.(2); and

(4) Have had one or more public transactions (Federal, State, or local) terminated for cause or default within the preceding three years.

b. The recipient agrees that, unless authorized by the AO, it will not knowingly enter into any subagreements or contracts under this award with a person or entity that is included on the Excluded Parties List System (www.epls.gov/). The recipient further agrees to include the following provision in any

subagreements or contracts entered into under this award:

DEBARMENT, SUSPENSION, INELIGIBILITY, AND VOLUNTARY EXCLUSION (JUNE 2012)

The recipient/contractor certifies that neither it nor its principals is presently excluded or disqualified from participation in this transaction by any Federal department or agency.

c. The policies and procedures applicable to debarment, suspension, and ineligibility under USAID-financed transactions are set forth in Subpart C of 2 CFR Section 180, as supplemented by 2 CFR 780.

[END OF PROVISION]

***M10. DRUG-FREE WORKPLACE (JUNE 2012)**

a. The recipient must comply with drug-free workplace requirements in subpart B (or subpart C, if the recipient is an individual) of 2 CFR 782, which adopts the Government-wide implementation (2 CFR part 182) of sec. 5152—5158 of the Drug-Free Workplace Act of 1988 (Pub. L. 100—690, Title V, Subtitle D; 41 U.S.C. 701—707).

[END OF PROVISION]

***M11. EQUAL PARTICIPATION BY FAITH-BASED ORGANIZATIONS (JUNE 2012)**

a. Faith-Based Organizations Encouraged.

Faith-based organizations are eligible to compete on an equal basis as any other organization to participate in USAID programs. Neither USAID nor entities that make and administer subawards of USAID funds will discriminate for or against an organization on the basis of the organization's religious character or affiliation. A faith-based organization may continue to carry out its mission, including the definition, practice, and expression of its religious beliefs, within the limits contained in this provision. More information can be found at the USAID Faith-Based and Community Initiatives Web site: http://transition.usaid.gov/our work/global partnerships/fbci/ and 22 CFR 205.1.

b. Inherently Religious Activities Prohibited.

(1) Inherently religious activities include, among other things, worship, religious instruction, prayer, or proselytization.

** An asterisk indicates that the section has been revised.*

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

(2) The recipient must not engage in inherently religious activities as part of the programs or services directly funded with financial assistance from USAID. If the recipient engages in inherently religious activities, it must offer those services at a different time or location from any programs or services directly funded by this award, and participation by beneficiaries in any such inherently religious activities must be voluntary.

(3) These restrictions apply equally to religious and secular organizations. All organizations that participate in USAID programs, including religious ones, must carry out eligible activities in accordance with all program requirements and other applicable requirements governing USAID-funded activities.

(4) These restrictions do not apply to USAID-funded programs where chaplains work with inmates in prisons, detention facilities, or community correction centers, or where USAID funds are provided to religious or other organizations for programs in prisons, detention facilities, or community correction centers, in which such organizations assist chaplains in carrying out their duties.

(5) Notwithstanding the restrictions of b.(1) and (2), a religious organization that participates in USAID-funded programs or services

(i) Retains its independence and may continue to carry out its mission, including the definition, practice, and expression of its religious beliefs, provided that it does not use direct financial assistance from USAID to support any inherently religious activities,

(ii) May use space in its facilities, without removing religious art, icons, scriptures, or other religious symbols, and

(iii) Retains its authority over its internal governance, and it may retain religious terms in its organization's name, select its board members on a religious basis, and include religious references in its organization's mission statements and other governing documents.

c. Construction of Structures Used for Inherently Religious Activities Prohibited. The recipient must not use USAID funds for the acquisition, construction, or rehabilitation of structures to the extent that those structures are used for inherently religious activities, such as sanctuaries, chapels, or other rooms that the recipient uses as its principal place of worship. Except for a structure used as its principal place of worship, where a structure is used for both eligible and inherently religious activities, USAID funds may not exceed the cost of those portions of the acquisition, construction, or rehabilitation that are attributable to eligible activities.

d. Discrimination Based on Religion Prohibited. The recipient must not discriminate against any beneficiary or potential beneficiary on the basis of religion or religious belief as part of the programs or services directly funded with financial assistance from USAID.

e. A religious organization's exemption from the Federal prohibition on employment discrimination on the basis of religion, set forth in Sec. 702(a) of the Civil Rights Act of 1964, 42 U.S.C. 2000e—1 is not forfeited when the organization receives financial assistance from USAID.

f. The Secretary of State may waive the requirements of this section in whole or in part, on a case-by-case basis, where the Secretary determines that such waiver is necessary to further the national security or foreign policy interests of the United States.

[END OF PROVISION]

** An asterisk indicates that the section has been revised.*

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

***M12. PREVENTING TERRORIST FINANCING — IMPLEMENTATION OF E.O.13224 (JUNE 2012)**

a. The recipient is reminded that U.S. Executive Orders and U.S. law prohibits transactions with, and the provision of resources and support to, individuals and organizations associated with terrorism. The recipient must not engage in transactions with, or provide resources or support to, individuals and organizations associated with terrorism. In addition, the recipient must verify that no support or resources are provided to individuals or entities that appear on the Specially Designated Nationals and Blocked Persons List maintained by the U.S. Treasury (online at: http://www.treasury.gov/resource-center/sanctions/SDN-List/Pages/default.aspx) or the United Nations Security designation list (online at: http://www.un.org/sc/committees/1267/aq sanctions list.shtml).

b. This provision must be included in all subagreements, including contracts and subawards, issued under this award.

[END OF PROVISION]

***M13. MARKING AND PUBLIC COMMUNICATIONS UNDER USAID-FUNDED ASSISTANCE (JUNE 2012)**

a. The USAID Identity is the official marking for USAID, comprised of the USAID logo and brandmark with the tagline “from the American people.” The USAID Identity is on the USAID Web site at www.usaid.gov/branding. Recipients must use the USAID Identity, of a size and prominence equivalent to or greater than any other identity or logo displayed, to mark the following:

(1) Programs, projects, activities, public communications, and commodities partially or fully funded by USAID;

(2) Program, project, or activity sites funded by USAID, including visible infrastructure projects or other physical sites;

(3) Technical assistance, studies, reports, papers, publications, audio-visual productions, public service announcements, Web sites/Internet activities, promotional, informational, media, or communications products funded by USAID;

(4) Commodities, equipment, supplies, and other materials funded by USAID, including commodities or equipment provided under humanitarian assistance or disaster relief programs; and

(5) Events financed by USAID, such as training courses, conferences, seminars, exhibitions, fairs, workshops, press conferences and other public activities. If the USAID Identity cannot be displayed, the recipient is encouraged to otherwise acknowledge USAID and the support of the American people.

b. When this award contains an approved Marking Plan, the recipient must implement the requirements of this provision following the approved Marking Plan.

c. If a “Marking Plan” is not included in this award, the recipient must propose and submit a plan for approval within the time specified by the Agreement Officer (AO).

d. The AO may require a preproduction review of program materials and “public communications” (documents and messages intended for external distribution, including but not limited to correspondence; publications; studies; reports; audio visual productions; applications; forms; press; and promotional materials) used in connection with USAID-funded programs, projects or activities, for compliance with an approved Marking Plan.

e. The recipient is encouraged to give public notice of the receipt of this award and announce progress and accomplishments. The recipient must provide copies of notices or announcements to the Agreement

---

** An asterisk indicates that the section has been revised.*

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

Officer’s Representative (AOR) and to USAID’s Office of Legislative and Public Affairs in advance of release, as practicable. Press releases or other public notices must include a statement substantially as follows:

‘The U.S. Agency for International Development administers the U.S. foreign assistance program providing economic and humanitarian assistance in more than 80 countries worldwide.”

f. Any “public communication” in which the content has not been approved by USAID must contain the following disclaimer:

“This study/report/audio/visual/other information/media product (specify) is made possible by the generous support of the American people through the United States Agency for International Development (USAID). The contents are the responsibility of [insert recipient name] and do not necessarily reflect the views of USAID or the United States Government.”

g. The recipient must provide the USAID AOR, with two copies of all program and communications materials produced under this award.

h. The recipient may request an exception from USAID marking requirements when USAID marking requirements would:

(1) Compromise the intrinsic independence or neutrality of a program or materials where independence or neutrality is an inherent aspect of the program and materials;

(2) Diminish the credibility of audits, reports, analyses, studies, or policy recommendations whose data or findings must be seen as independent;

(3) Undercut host-country government “ownership” of constitutions, laws, regulations, policies, studies, assessments, reports, publications, surveys or audits, public service announcements, or other communications;

(4) Impair the functionality of an item;

(5) Incur substantial costs or be impractical;

(6) Offend local cultural or social norms, or be considered inappropriate; or

(7) Conflict with international law.

i. The recipient may submit a waiver request of the marking requirements of this provision or the Marking Plan, through the AOR, when USAID-required marking would pose compelling political, safety, or security concerns, or have an adverse impact in the cooperating country.

(1) Approved waivers “flow down” to subagreements, including subawards and contracts, unless specified otherwise. The waiver may also include the removal of USAID markings already affixed, if circumstances warrant.

(2) USAID determinations regarding waiver requests are subject to appeal by the recipient, by submitting a written request to reconsider the determination to the cognizant Assistant Administrator.

j. The recipient must include the following marking provision in any subagreements entered into under this award:

** An asterisk indicates that the section has been revised.*

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

“As a condition of receipt of this subaward, marking with the USAID Identity of a size and prominence equivalent to or greater than the recipient’s, subrecipient’s, other donor’s, or third party’s is required. In the event the recipient chooses not to require marking with its own identity or logo by the subrecipient, USAID may, at its discretion, require marking by the subrecipient with the USAID Identity.”

[END OF PROVISION]

M14. REGULATIONS GOVERNING EMPLOYEES (AUGUST 1992)

a. The recipient’s employees must maintain private status and may not rely on local U.S. Government offices or facilities for support while under this grant.

b. The sale of personal property or automobiles by recipient employees and their dependents in the foreign country to which they are assigned are subject to the same limitations and prohibitions which apply to direct-hire USAID personnel employed by the Mission, including the rules contained in 22 CFR 136, except as this may conflict with host government regulations.

c. Other than work to be performed under this award for which an employee is assigned by the recipient, employees of the recipient must not engage directly or indirectly, either in the individual’s own name or in the name or through an agency of another person, in any business, profession, or occupation in the foreign countries to which the individual is assigned. In addition, the individual must not make loans or investments to or in any business, profession, or occupation in the foreign countries to which the individual is assigned.

d. The recipient’s employees, while in a foreign country, are expected to show respect for its conventions, customs, and institutions, to abide by its applicable laws and regulations, and not to interfere in its internal political affairs.

e. In the event the conduct of any recipient employee is not in accordance with the preceding paragraphs, the recipient’s chief of party must consult with the USAID Mission Director and the employee involved, and must recommend to the recipient a course of action with regard to such employee.

f. The parties recognize the rights of the U.S. Ambassador to direct the removal from a country of any U.S. citizen or the discharge from this grant award of any third country national when, in the discretion of the Ambassador, the interests of the United States so require.

g. If it is determined, either under e. or f. above, that the services of such employee should be terminated, the recipient must use its best efforts to cause the return of such employee to the United States, or point of origin, as appropriate.

[END OF PROVISION]

M15. CONVERSION OF UNITED STATES DOLLARS TO LOCAL CURRENCY (NOVEMBER 1985)

Upon arrival in the cooperating country, and from time to time as appropriate, the recipient's chief of party must consult with the Mission Director who must provide, in writing, the procedure the recipient and its employees must follow in the conversion of United States dollars to local currency. This may include, but is not limited to, the conversion of currency through the cognizant United States Disbursing Officer or Mission Controller, as appropriate.

[END OF PROVISION]

M16. USE OF POUCH FACILITIES (AUGUST 1992)

a. Use of diplomatic pouch is controlled by the Department of State. The Department of State has authorized the use of pouch facilities for USAID recipients and their employees as a general policy, as

---

** An asterisk indicates that the section has been revised.*

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

detailed in items (1) through (6) below. However, the final decision regarding use of pouch facilities rest with the Embassy or USAID Mission. In consideration of the use of pouch facilities, the recipient and its employees agree to indemnify and hold harmless, the Department of State and USAID for loss or damage occurring in pouch transmission:

(1) Recipients and their employees are authorized use of the pouch for transmission and receipt of up to a maximum of .9 kgs per shipment of correspondence and documents needed in the administration of assistance programs.

(2) U.S. citizen employees are authorized use of the pouch for personal mail up to a maximum of .45 kgs per shipment (but see a.(3) below).

(3) Merchandise, parcels, magazines, or newspapers are not considered to be personal mail for purposes of this standard provision and are not authorized to be sent or received by pouch.

(4) Official and personal mail pursuant to a.(1) and (2) above sent by pouch should be addressed as follows:

Name of individual or organization (followed by
letter symbol "G")
City Name of post (USAID/)
Agency for International Development
Washington, DC 20523-0001

(5) Mail sent via the diplomatic pouch may not be in violation of U.S. Postal laws and may not contain material ineligible for pouch transmission.

(6) Recipient personnel are NOT authorized use of military postal facilities (APO/FPO). This is an Adjutant General's decision based on existing laws and regulations governing military postal facilities and is being enforced worldwide.

b. The recipient is responsible for advising its employees of this authorization, these guidelines, and limitations on use of pouch facilities.

c. Specific additional guidance on grantee use of pouch facilities in accordance with this standard provision is available from the Post Communication Center at the Embassy or USAID Mission.

[END OF PROVISION]

***M17. TRAVEL AND INTERNATIONAL AIR TRANSPORTATION (JUNE 2012)**

a. PRIOR BUDGET APPROVAL

Direct charges for travel costs for international air travel by individuals are allowable only when each international trip has received prior budget approval. Such approval is met when all of the following are met:

(1) The trip is identified by providing the following information: the number of trips, the number of individuals per trip, and the origin and destination countries or regions;

(2) All of the information noted at a.(1) above is incorporated in the Schedule of this award or amendments to this award; and

(3) The costs related to the travel are incorporated in the budget of this award.

** An asterisk indicates that the section has been revised.*

The Agreement Officer (AO) may approve, in writing, international travel costs that have not been incorporated in this award. To obtain AO approval, the recipient must request approval at least three weeks before the international travel, or as far in advance as possible. The recipient must keep a copy of the AO's approval in its files. No other clearance (including country clearance) is required for employees of the recipient, its subrecipients or contractors. International travel by employees who are not on official business of the recipient, such as rest and recuperation (R&R) travel offered as part of an employee's benefits package, must be consistent with the recipient's personnel and travel policies and procedures and does not require approval.

b. TRAVEL COSTS

All travel costs must comply with the applicable cost principles and must be consistent with those normally allowed in like circumstances in the recipient's non-USAID-funded activities. Costs incurred by employees and officers for travel, including air fare, costs of lodging, other subsistence, and incidental expenses, may be considered reasonable and allowable only to the extent such costs do not exceed charges normally allowed by the non-profit organization in its regular operations as the result of the non-profit organization's written travel policy.

In the absence of a reasonable written policy regarding international travel costs, the standard for determining the reasonableness of reimbursement for international travel costs will be the Standardized Regulations (Government Civilians, Foreign Areas), published by the U.S. Department of State, as from time to time amended. The most current Standardized Regulations on international travel costs may be obtained from the AO. In the event that the cost for air fare exceeds the customary standard commercial airfare (coach or equivalent) or the lowest commercial discount airfare, the recipient must document one of the allowable exceptions from the applicable cost principles.

c. FLY AMERICA ACT RESTRICTIONS

(1) The recipient must use U.S. Flag Air Carriers for all international air transportation (including personal effects) funded by this award pursuant to the Fly America Act and its implementing regulations to the extent service by such carriers is available.

(2) In the event that the recipient selects a carrier other than a U.S. Flag Air Carrier for international air transportation, in order for the costs of such international air transportation to be allowable, the recipient must document such transportation in accordance with this provision and maintain such documentation pursuant to the Standard Provision, "Accounting, Audit and Records." The documentation must use one of the following reasons or other exception under the Fly America Act:

(i) The recipient uses a European Union (EU) flag air carrier, which is an airline operating from an EU country that has signed the US-EU "Open Skies" agreement (http://www.state.gov/e/eb/rls/othr/ata/i/ic/170684.htm).

(ii) Travel to or from one of the following countries on an airline of that country when no city pair fare is in effect for that leg (see http://apps.fas.gsa.gov/citypairs/search/):

a. Australia on an Australian airline,
b. Switzerland on a Swiss airline, or
c. Japan on a Japanese airline;

(iii) Only for a particular leg of a route on which no US Flag Air Carrier provides service on that route;

(iv) For a trip of 3 hours or less, the use of a US Flag Air Carrier at least doubles the travel time;

---

* *An asterisk indicates that the section has been revised.*

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

(v) If the US Flag Air Carrier offers direct service, use of the US Flag Air Carrier would increase the travel time by more than 24 hours; or

(vi) If the US Flag Air Carrier does <u>not</u> offer direct service,

a. Use of the US Flag Air Carrier increases the number of aircraft changes by 2 or more,

b. Use of the US Flag Air Carrier extends travel time by 6 hours or more, or

c. Use of the US Flag Air Carrier requires a layover at an overseas interchange of 4 hours or more.

d. DEFINITIONS

The terms used in this provision have the following meanings:

(1) "Travel costs" means expenses for transportation, lodging, subsistence (meals and incidentals), and related expenses incurred by employees who are on travel status on official business of the recipient for any travel outside the country in which the organization is located. "Travel costs" do

not include expenses incurred by employees who are not on official business of the recipient, such as rest and recuperation (R&R) travel offered as part of an employee's benefits package that are consistent with the recipient's personnel and travel policies and procedures.

(2) "International air transportation" means international air travel by individuals (and their personal effects) or transportation of cargo by air between a place in the United States and a place outside thereof, or between two places both of which are outside the United States.

(3) "U.S. Flag Air Carrier" means an air carrier on the list issued by the U.S. Department of Transportation at http://ostpxweb.dot.gov/aviation/certific/certlist.htm. U.S. Flag Air Carrier service also includes service provided under a code share agreement with another air carrier when the ticket, or documentation for an electronic ticket, identifies the U.S. flag air carrier's designator code and flight number.

(4) For this provision, the term "United States" includes the fifty states, Commonwealth of Puerto Rico, possessions of the United States, and the District of Columbia.

e. SUBAGREEMENTS

This provision must be included in all subagreements, including all subawards and contracts, under which this award will finance international air transportation.

[END OF PROVISION]

***M18. OCEAN SHIPMENT OF GOODS (JUNE 2012)**

a. Prior to contracting for ocean transportation to ship goods purchased or financed with USAID funds under this award, the recipient must contact the office below to determine the flag and class of vessel to be used for shipment:

U.S. Agency for International Development,
Office of Acquisition and Assistance, Transportation Division
1300 Pennsylvania Avenue, NW
Washington, DC 20523-7900
Email: oceantransportation@usaid.gov

** An asterisk indicates that the section has been revised.*

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

b. This provision must be included in all subagreements, including subwards and contracts.

[END OF PROVISION]

M19. VOLUNTARY POPULATION PLANNING ACTIVITIES – MANDATORY REQUIREMENTS (MAY 2006)

Requirements for Voluntary Sterilization Programs

(1) Funds made available under this award must not be used to pay for the performance of involuntary sterilization as a method of family planning or to coerce or provide any financial incentive to any individual to practice sterilization.

Prohibition on Abortion-Related Activities:

(1) No funds made available under this award will be used to finance, support, or be attributed to the following activities: (i) procurement or distribution of equipment intended to be used for the purpose of inducing abortions as a method of family planning; (ii) special fees or incentives to any person to coerce or motivate them to have abortions; (iii) payments to persons to perform abortions or to solicit persons to undergo abortions; (iv) information, education, training, or communication programs that seek to promote abortion as a method of family planning; and (v) lobbying for or against abortion. The term "motivate," as it relates to family planning assistance, must not be construed to prohibit the provision, consistent with local law, of information or counseling about all pregnancy options.

(2) No funds made available under this award will be used to pay for any biomedical research which relates, in whole or in part, to methods of, or the performance of, abortions or involuntary sterilizations as a means of family planning. Epidemiologic or descriptive research to assess the incidence, extent or consequences of abortions is not precluded.

[END OF PROVISION]

***M20. TRAFFICKING IN PERSONS (JUNE 2012)**

a. USAID is authorized to terminate this award, without penalty, if the recipient or its employees, or any subrecipient or its employees, engage in any of the following conduct:

(1) Trafficking in persons (as defined in the Protocol to Prevent, Suppress, and Punish Trafficking in Persons, especially Women and Children, supplementing the UN Convention against Transnational Organized Crime) during the period of this award;

(2) Procurement of a commercial sex act during the period of this award; or

(3) Use of forced labor in the performance of this award.

b. For purposes of this provision, "employee" means an individual who is engaged in the performance of this award as a direct employee, consultant, or volunteer of the recipient or any subrecipient.

c. The recipient must include in all subagreements, including subawards and contracts, a provision prohibiting the conduct described in a(1)-(3) by the subrecipient, contractor or any of their employees.

[END OF PROVISION]

***M21. SUBMISSIONS TO THE DEVELOPMENT EXPERIENCE CLEARINGHOUSE AND PUBLICATIONS (JUNE 2012)**

a. Submissions to the Development Experience Clearinghouse (DEC).

1) The recipient must provide the Agreement Officer's Representative one copy of any Intellectual

---

** An asterisk indicates that the section has been revised.*

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

Work that is published, and a list of any Intellectual Work that is not published.

2) In addition, the recipient must submit Intellectual Work, whether published or not, to the DEC, either on-line (preferred) or by mail. The recipient must review the DEC Web site for submission instructions, including document formatting and the types of documents to submit. Submission instructions can be found at: http://dec.usaid.gov.

3) For purposes of submissions to the DEC, Intellectual Work includes all works that document the implementation, evaluation, and results of international development assistance activities developed or acquired under this award, which may include program and communications materials, evaluations and assessments, information products, research and technical reports, progress and performance reports required under this award (excluding administrative financial information), and other reports, articles and papers prepared by the recipient under the award, whether published or not. The term does not include the recipient's information that is incidental to award administration, such as financial, administrative, cost or pricing, or management information.

4) Each document submitted should contain essential bibliographic information, such as 1) descriptive title; 2) author(s) name; 3) award number; 4) sponsoring USAID office; 5) development objective; and 6) date of publication.

5) The recipient must not submit to the DEC any financially sensitive information or personally identifiable information, such as social security numbers, home addresses and dates of birth. Such information must be removed prior to submission. The recipient must not submit classified documents to the DEC.

b. In the event award funds are used to underwrite the cost of publishing, in lieu of the publisher assuming this cost as is the normal practice, any profits or royalties up to the amount of such cost must be credited to the award unless the schedule of the award has identified the profits or royalties as program income.

[END OF PROVISION]

** An asterisk indicates that the section has been revised*

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

MODIFICATION OF ASSISTANCE

1. MODIFICATION NUMBER	2. EFFECTIVE DATE OF MODIFICATION	3. AWARD NUMBER:	4. EFFECTIVE DATE OF AWARD :
05	See block 15	A1D-AEG-A-00-08-00009	09/30/2008

5. GRANTEE:

Arcadia Biosciences, Inc.
202 Cousteau Pl., Suite 200
Davis, CA 95618

DUNS NO 1359644760

6. ADMINISTERED BY:

Acquisition and Assistance
Office of Acquisition and Assistance
M/OAA/BFS, Room 568A, SA-44
1300 Pennsylvania Ave, N.W.
Washington, D.C. 20523

TIN NO. : 81-0571538 **LOC NO.** : HHS-C4625P1

7. FISCAL DATA: **Amount Obligated**: $400,000.00

8. TECHNICAL OFFICE: E&E/DGST;

GLAAS Requisition: REQM-BFS-14-000033

9. PAYMENT OFFICE:

Budget Fiscal Year:
Operating Unit:
Strategic Objective:
Team/Division:
Benefiting Geo Area:
Object Class:

U.S. Agency for International Development
Office of Financial Management
M/FM/CMP/DC - SA-44 Room 435K
1300 Pennsylvania Avenue, NW
Washington DC 20523

10. FUNDING SUMMARY:

	Obligated Amount	Total Est. Amt.
Amount Prior to this Modification:	$ 6,159,009.00	$ 8,175,387.00
Change Made by this Modification:	$ 400,000.00	$ 0.00
New/Current Total:	$ 6,559,009.00	$ 8,175,387.00

11. DESCRIPTION OF MODIFICATION

The purpose of this modification is to provide incremental funding in the amount of $400,000.00 to support the Abiotic Stress Tolerant Rice and Wheat program with Arcadia Biosciences. The total obligated amount has increased by $400,000.00 from $6,159,009.00 to $6,559,009.00.

ACCOUNTING DATA:

Accounting Template: BFS BRG Funds: BBFY: 2013; EBFY: 2014; Fund: DV-GFSI; OP: BFS/ARP: Prog Area: A18; Dist Code; BFS- APF; Prog Elem: A074; BGA: 997; SOC: 4100201.

ALL OTHER TERMS AND CONDITIONS REMAIN THE SAME.

12. THIS MODIFICATION IS ENTERED INTO PURSUANT TO THE AUTHORITY OF FAA Act of 1961, as amended AS AMENDED. EXCEPT AS SPECIFICALLY HEREIN AMENDED, ALL TERMS AND CONDITIONS OF THE GRANT REFERENCED IN BLOCK #3 ABOVE, AS IT MAY HAVE HERETOFORE BEEN AMENDED, REMAIN UNCHANGED AND IN FULL FORCE AND EFFECT.

13. GRANTEE o IS x IS NOT REQUIRED TO SIGN THIS DOCUMENT TO RECONFIRM ITS AGREEMENT WITH THE CHANGES EFFECTED HEREIN

14. GRANTEE:

BY: _____

_____
(Name Typed or Printed)

TITLE: _____

DATE: _____

15. THE UNITED STATES OF AMERICA

U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT

BY: **/s/ Charles Jackson**

Charles Jackson
(Name Typed or Printed)

TITLE: **Agreement Officer**

DATE: **11/21/2013**

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

[USAID FROM THE AMERICAN PEOPLE LOGO]

October 11, 2012

Eric Rey, President and CEO
Arcadia Biosciences, Inc.
202 Cousteau Place, Suite 105
Davis, CA 95618
Phone No. 530-750-7173

Subject: Cooperative Agreement No. AID-OAA-A-13-00001, Development of Heat Tolerant Wheat for South Asia

Dear Mr. Rey:

Pursuant to the authority contained in the Foreign Assistance Act of 1961, as amended, the U.S. Agency for International Development (USAID) hereby awards to ARCADIA BIOSCIENCES, INC., hereinafter referred to as the "Recipient", the sum of $3,829,228.00 to provide support for a program in Development of Heat Tolerant Wheat for South Asia as described in the Schedule of this award and in Attachment B, entitled "Program Description."

This Cooperative Agreement is effective and obligation is made as of the date of this letter and shall apply to expenditures made by the Recipient in furtherance of program objectives during the period beginning with the effective date 10/12/2012 and ending 09/30/2017. USAID will not be liable for reimbursing the Recipient for any costs in excess of the obligated amount.

This Cooperative Agreement is made to the Recipient to ARCADIA BIOSCIENCES, INC., on condition that the funds will be administered in accordance with the terms and conditions as set forth in Attachment A (the Schedule), Attachment B (the Program Description), and Attachment C (the Standard Provisions), all of which have been agreed to by your organization.

Please sign this letter to acknowledge your receipt of the Cooperative Agreement, and return it to the Agreement Officer.

Sincerely yours,

Agreement Officer

Attachments:
A. Schedule
B. Program Description
C. Standard Provisions
D. Branding Strategy and Marking Plan

ACKNOWLEDGED:

BY: /s/ _____
TITLE: _____
DATE: _____

A. GENERAL

1. USAID Amount Obligated this Action: $1,146,172.00
2. Total Estimated Program Amount: $12,464,040.00
3. Total Estimated USAID Amount: $3,829,228.00
4. Leverage Funding (Non-Federal): $8,634,812.00
5. Total Obligated USAID Amount: $1,146,172.00
6. Activity Title: Development of Heat Tolerant Wheat for South Asia
7. USAID Technical Office: BFS
8. Tax I.D. Number: 81-0571538
9. DUNS No.: 135964760
10. LOC Number: HHS-C4625P1

B. SPECIFIC

GLAAS REQUEST: REQ-BFS-13-000001

BBFY	2012
EBFY	2013
Fund	DV-GFSI
Operating Unit (OP)	BFS/ARP
Program Area	A18
Distribution Code	BFS-APF

Program Element	A074
Program Sub-Element	None
Team/Division	None
BGA	997
Sob-Object Code SOC	4100302
Obligated Amount	$1,146,172.00

C. PAYMENT OFFICE

U.S. Agency for International Development (USAID)
M/CFO/CMP
loc@usaid.gov
1300 Pennsylvania Ave., NW
SA-44
Washington, DC 20523

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

ATTACHMENT A - SCHEDULE

A.1 PURPOSE OF AWARD

The purpose of this Cooperative Agreement is to provide support for the program described in Attachment B to this Cooperative Agreement entitled "Program Description."

A.2 PERIOD OF AWARD

1. The effective date of this Award is October 12, 2012. The estimated completion date of this Award is September 30, 2017, as indicated in the Budget in A.4 below.

2. Funds obligated hereunder are available for program expenditures from the effective date of the Award through September 30, 2013

A.3 AMOUNT OF AWARD AND PAYMENT

1. The total estimated amount of this Agreement for the period shown in A.2.1 above is $3,829,228.00 as shown in the Budget below.

2. USAID hereby obligates the amount of $1,146,172.00 (U.S. Dollars) for program expenditures during the period set forth in A.2.2 above. The Recipient will be given written notice by the Agreement Officer if additional funds will be added. USAID is not obligated to reimburse the Grantee for the expenditure of amounts in excess of the total obligated amount.

3. Payment will be made to the Recipient by Letter of Credit in accordance with procedures set forth in 22 CFR 226

A.4 AWARD BUDGET

The following is the Agreement Budget, including local cost financing items, if authorized. Revisions to this budget shall be made in accordance with 22 CFR 226.

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

BUDGET

Cost Element	Year 1 (10/12/12-09/30/13 (in $US)	Year 2 (10/01/13 09/30/14 (in $US)	Year 3 (10/01/14-09/30/15 (in $US)	Year 4 (10/01/15-09/30/16 (in $US)	Year 5 (10/01/16-09/30/17 (in $US)	Estimated Total
Personnel	138,426.00	49,093.00	62,710.00	68,506.00	32,126.00	350,861.00
Fringe Benefits	38,759.00	13,746.00	17,559.00	19,182.00	8,995.00	98,241.00
Travel	2,600.00	—	2,600.00	—	2,600.00	7,800.00
Equipment	—	—	—	—	—	—
Supplies	119,417.00	16,250.00	26,333.00	34,000.00	4,000.00	200,000.00
Subaward	566,144.00	307,297.00	322,844.00	338,393.00	353,945.00	1,888,623.00
Green House	25,458.00	209,084.00	118,083.00	19,500.00	—	372,125.00
Field Costs	—	—	—	—	—	—
Total Direct Costs	890,804.00	595,470.00	550,129.00	479,581.00	401,666.00	2,917,650.00
Indirect Charges	255,368.00	233,406.00	196,162.00	142,532.00	84,110.00	911,578.00
Total	1,146,172.00	828,876.00	746,291.00	622,113.00	485,776.00	3,829,228.00

Total USAID:	$ 3,829,228.00
Total Leverage:	$ 8,634,812.00
Grand Total Program:	$ 12,464,040.00

A.5 REPORTING AND EVALUATION

A. Financial Reporting

The Recipient shall submit an original and one copy. Financial Reports shall be in keeping with 22 CFR 226.52.

The recipient shall list each country included in the program and the total amount expended for each country under the award for the reporting period in the "Remarks" block on the Federal Financial Form (SF-425), or on a separate sheet of paper. Financial Reports will be required on a quarterly basis. The recipient shall submit these forms in the following manner:

For recipients without a letter of credit:

The Recipient must submit one electronic original to the Agreement Officer's Representative (AOR) with one copy to the Agreement Officer of Standard Form 425 (SF-425) on a quarterly basis.

For recipients with a letter of credit:

(1) The recipient must submit the Federal Financial Form (SF-425) on a quarterly basis via electronic format to the U.S. Department of Health and Human Services (http://www.dpm.psc.gov). The recipient must submit a copy of the FFR at the same time to the Agreement Officer and the Agreement Officer's Technical Representative (AOR).

(2) The recipient must submit the original and two copies of all final financial reports to USAID/Washington, M/CFO/CMP/LOC Unit, the Agreement Officer, and the AOR. The recipient must submit an electronic version of the final Federal Financial Form (SF-425) to U.S. Department of Health and Human Services in accordance with paragraph (1) above.

Electronic copies of the SF-425 can be found at:

http://www.whitehouse.gov/omb/grants/standard_forms/ff_report.pdf and http://www.forms.gov/bgfPortal/docDetails.do?dId=15149.

Line item instructions for completing the SF-425 can be found at:

http://www.whitehouse.gov/omb/grants/standard_forms/ffr_instructions.pdf.

4. Reporting on Foreign Taxes shall be in accordance with Attachment C, Required as Applicable Standard Provision II, RAA12, REPORTING HOST GOVERNMENT TAXES (JUNE 2012).

B. Monitoring and Reporting Program Performance

1. Reporting Requirements for the Cooperative Agreement:

a. Semiannual Reports: The Recipient shall submit electronically a copy of a Semiannual Performance Report to the AOR. The Performance Reports must detail progress made against agreed-upon performance indicators. It should present the information contained in 22 CFR 226.51(d). and a detailed accounting of leverage contributions including whether the contribution was cash or in-kind, and if in-kind, provide a description of the contribution, the estimated value, and the basis for determining the estimated value. The AOR will provide guidance on data required in the semiannual reports to meet specific reporting requirements for the Feed the Future initiative.

b. Final Report: The Final Performance Report must present the information described in Section (2)B.1.a. for the duration of the award. The Final Performance Report will replace the last Semiannual Performance Report and must also specifically include an executive summary, an overall description of the Recipient's activities, accomplishments and attainment of results and impact against agreed-upon indicators, by country of engagement, an assessment of progress made toward accomplishing the objectives and expected results, and conclusions and lessons learned, including identification of future challenges and opportunities for replicating similar programs. The Final Performance Report should detail all deliverables produced by the Program and must also include a Final Fiscal Report that describes how funds were used. The Recipient may be required to provide a cost benefit analysis as part of the Final Performance Report to determine the cost of impacts achieved using a methodology to be determined in consultation with the AOR.

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

c. All Reports and deliverables should be provided to the AOTR in a format to be agreed upon with AOR.

2. Annual Work Plans: The Annual Work Plan shall be submitted in a format and on a time schedule agreed to between the AOR and the Recipient.

C. Submission of Performance Reports and Other Deliverables

The Recipient shall submit an electronic copy to the Washington AOR and to the Agreement Officer, and one electronic copy of the final report to the Development Experience Clearinghouse (DEC). Documents submitted to the DEC should be sent in original format via email to:

E-mail (the preferred means of submission):
docsubmit@dec.cdie.org

Please reference web site http://www.dec.org/submit_doc.cfm or contact one of the following concerning any questions your organization may have on the reporting requirements:

Development Experience Clearinghouse
E-mail: docsubmit@dec.cdie.org
Phone: (301) 562-0641

USAID/PPC/DEI
Phone (202) 712-4696

A.6 NEGOTIATED INDIRECT COST RATES - ADVANCE UNDERSTANDING ON CEILING INDIRECT COST RATES AND FINAL REIMBURSEMENT FOR INDIRECT COSTS

Pending establishment of revised or final indirect cost rates, allowable indirect costs shall be reimbursed on the basis of the following negotiated provisional or predetermined rates and the appropriate bases:

(1) Reimbursement for allowable indirect costs shall be at final negotiated rates but not in excess of the following ceiling rates:

Description	Rate	Base	Type	Period
G&A	52.5%	(1/)	(1/)	(1/)
G&A	65%	(2/)	(2/)	(2/)

*G&A on subawards is limited to 15% for the entire Agreement period, including any extension(s) thereof.

(1/)Base of application: Total direct costs incurred excluding G&A expenses Type of Rate: Ceiling

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

Period: From the Agreement effective date through 09/30/2013.

(2/)Base of application: Total direct costs incurred excluding G&A expenses
Type of Rate: Ceiling
Period: From 10/01/2013 — 09/30/2017, including any extensions thereof.

(2) The Awardee is required to provide written notification to the indirect cost negotiator prior to implementing any changes which could affect the applicability of the approved rates. Any changes in accounting practice to include changes in the method of charging a particular type of cost as direct or indirect and changes in the indirect cost allocation base or allocation methodology require the prior approval of the Office of Overhead, Special Cost and Closeout (OCC). Failure to obtain such prior written approval may result in cost disallowance.

(3) The Government shall not be obligated to pay any additional amount on account of indirect costs above the ceiling rates established in the Agreement. If the final indirect cost rates are less than the negotiated ceiling rates, the negotiated rates will be reduced to conform to the lower rates.

(4) This understanding shall not change any monetary ceiling, obligation, cost limitation, or obligation established in the Agreement.

A.7 TITLE TO PROPERTY

Title to property will vest with the recipient, subject to the conditions in 22 CFR 226.34.

A.8 AUTHORIZED GEOGRAPHIC CODE

The authorized geographic code for procurement of goods and services under this award is 937.

A.9 RESOURCE LEVERAGING

The Recipient agrees to expend an amount not less than $8,634,812.00 of the total activity cost of $12,464,040.00. Resource leveraging refers to the portion of project or program costs not borne by the Federal Government. USAID shall have the ability to revise or withdraw from the Alliance agreement when contributions are not forthcoming as originally proposed in this Agreement.

A.10 SUBSTANTIAL INVOLVEMENT

As delegated by the Agreement Officer, the substantial involvement of the AOR during the administration of the Cooperative Agreement will be limited to:

a) Approval of the Detailed Implementation Plan (DIP), submitted to USAID/BFS/ARP, and any subsequent revisions. BFS/ARP staff and technical specialists will review the DIP and meet with the recipient to discuss strengths and weaknesses. The DIP will provide a plan for the program, including plans for baseline and final surveys and collection of required indicators.

Substantial changes resulting in any revisions to specific activities, locations, beneficiary population, international training costs, international travel, indirect cost elements, or the procurement plan may require a formal modification to the Agreement by the Agreement Officer. The approved DIP will supplement the initial Program Description in the Agreement and form part of the official documentation.

b) Approval of key personnel, which include principle scientific leaders representing Arcadia Biosciences, CIMMYT and NBPGR.

c) USAID involvement in monitoring progress toward the achievement of program objectives during the performance of this Agreement, include written guidelines for the contents of annual reports, and mid-term and final evaluations in accordance with 22 CFR 226.51

d) Agency and Recipient Collaboration of Joint Participation.

a. USAID concurrence on the substantive provisions of the subawards.
b. Approval of the recipient's monitoring and evaluation plans.
c. Agency monitoring to permit specified kinds of direction or redirection because of interrelationships with other projects.

Note: Any changes to the Program Description or the approved budget may only be approved by the Agreement Officer after review by the AOR.

A.11 PROGRAM INCOME

The Recipient shall account for Program Income in accordance with 22 CFR 226.24. Program Income earned under this award shall be added to the project.

A.12 SPECIAL PROVISIONS

A.12 .1 ENVIRONMENTAL PROVISIONS

A. Statutory and Regulatory Requirements

1. The Foreign Assistance Act of 1961, as amended, Section 117 requires that the impact of USAID's activities on the environment be considered and that USAID include environmental sustainability as a central consideration in designing and carrying out its development programs. This mandate is codified in Federal Regulations (22 CFR 216) and in USAID's Automated Directives System (ADS) Parts 201.5.10g and 204 (*http://www.usaid.gov/policy/ADS/200/*), which, in part, require that the potential environmental impacts of USAID-financed activities are identified prior to a final decision to proceed and that appropriate environmental safeguards are adopted for all activities. Recipient environmental compliance obligations under these regulations and procedures are specified in the following paragraphs of this cooperative agreement.

2. In addition, recipient must comply with host country environmental regulations unless otherwise directed in writing by USAID. In case of conflict between host country and USAID regulations, the latter shall govern.

3. No activity funded under this cooperative agreement will be implemented unless an environmental threshold determination, as defined by 22 CFR 216, has been reached for that activity, as documented in a Request for Categorical Exclusion (RCE), Initial Environmental Examination (IEE), or Environmental Assessment (EA) duly signed by the Bureau Environmental Officer (BEO). (Hereinafter, such documents are described as "approved Regulation 216 environmental documentation.")

B. Program Activities

1. As part of its initial Work Plan, and all Annual Work Plans thereafter, the recipient, in collaboration with the USAID Agreement Officer's Technical Representative (AOTR) and Mission Environmental Officer or Bureau Environmental Officer, as appropriate, shall review all ongoing and planned activities under this cooperative agreement to determine if they are within the scope of the approved Regulation 216 environmental documentation.

2. If the recipient plans any new activities outside the scope of the approved Regulation 216 environmental documentation, it shall prepare an amendment to the documentation for USAID review and approval. No such new activities shall be undertaken prior to receiving written USAID approval of environmental documentation amendments.

3. Any ongoing activities found to be outside the scope of the approved Regulation 216 environmental documentation shall be halted until an amendment to the documentation is submitted and written approval is received from USAID.

C. Mitigation and Monitoring Plan

1. Unless the approved Regulation 216 documentation contains a complete environmental mitigation and monitoring plan (EMMP) or a project mitigation and monitoring (M&M) plan, the recipient shall prepare an EMMP or M&M Plan describing how the recipient will, in specific terms, implement all IEE and/or EA conditions that apply to proposed project activities within the scope of the award. The EMMP or M&M Plan shall include monitoring the implementation of the conditions and their effectiveness.

2. Integrate a completed EMMP or M&M Plan into the initial work plan.

3. Integrate an EMMP or M&M Plan into subsequent Annual Work Plans, making any necessary adjustments to activity implementation in order to minimize adverse impacts to the environment.

A.12.2 NON-FEDERAL AUDITS

In accordance with 22 C.F.R. Part 226.26 Recipients and subrecipients are subject to the audit

requirements contained in the Single Audit Act Amendments of 1996 (31 U.S.C. 7501—7507) and revised OMB Circular A—133, “Audits of States, Local Governments, and Non-Profit Organizations.” Recipients and subrecipients must use an independent, non-Federal auditor or audit organization which meets the general standards specified in generally accepted government auditing standards (GAGAS) to fulfill these requirements.

A.12.3 BRANDING AND MARKING REQUIREMENTS

All USAID-sponsored assistance awards are required to adhere to branding policies and marking Requirements for grants and cooperative agreements in accordance with AAPD 05-11(http://www.usaid.gov/business/business_opportunities/cib/pdf/aapd05_11.pdf), 22 CFR 226.91, and ADS 320 (http://www.usaid.gov/policy/ads/300/320.pdf). This includes visibly displaying the USAID Standard Graphic Identity that clearly communicates assistance is, “From the American people” on all programs, projects, activities, publications, public communications, and commodities provided or supported through USAID assistance awards. AAPD 05-11 requires that, after the evaluation of the applications, the USAID Agreement Officer will request the Apparently Successful Applicant to submit a Branding Strategy that describes how the program, project, or activity is named and positioned, how it is promoted and communicated to beneficiaries and cooperating country citizens, and identifies all donors and explains how they will be acknowledged.

Branding Strategy and Marking Plan: The Recipient’s Branding Strategy and Marking Plan in Attachment D is hereby incorporated into this Award.

-END OF SCHEDULE-

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

ATTACHMENT B - PROGRAM DESCRIPTION

Development of Heat Tolerant Wheat for South Asia

EXECUTIVE SUMMARY

Among major staple crops, global wheat yields may be the hardest hit according to a number of climate change models. And while wheat is the most drought-adapted of major crops, improving heat adaptation would make wheat a climate resilient staple. An estimated 1.2 billion poor people—the majority of whom live in South Asia—depend on wheat. The International Food Policy Research Institute estimates that wheat yields in South Asia could decline as much as 50% by 2050 and recent research in India suggests that most crop models have underestimated the impact of extreme heat by as much as 50%.

Development of more heat tolerant varieties of wheat aligns Arcadia’s business interests and those of USAID and CIMMYT in poverty reduction and food security. Arcadia has significant commercial partnerships and investments focused on developing new technologies in wheat for global markets. CIMMYT is the leader in wheat germplasm improvement for developing countries. This alliance will bring the technical resources and expertise of both organizations together, spurring technological innovation to address a significant global challenge.

Only modest genetic gains in yield in heat stressed environments have been achieved to date, but work in wheat and other cereals points clearly to genetic diversity in the heat sensitivity of starch synthesis, membrane thermostability, and photosynthesis. We will target these metabolic constraints by pyramiding natural genetic diversity identified at CIMMYT and India’s National Bureau of Plant Genetic Resources with induced genetic diversity in starch synthesis developed at Arcadia in order to improve wheat heat adaptation in a fundamental way.

CIMMYT has already pioneered a number of high throughput phenotyping methodologies for stress adaptive traits and applied them successfully in breeding and QTL discovery. In this project, membrane thermostability and chlorophyll fluorescence will be used specifically to expand the screening of diverse germplasm for hot environments. The project will capitalize on two major genetic resource screening efforts already underway; namely the World Wheat Collection at CIMMYT and the Indian Wheat Collection from the National Bureau of Plant Genetic Resources (NBPGR). Sources of heat tolerance arising from these screens will be used to initiate breeding for climate-ready wheat by pyramiding the new traits into the best available germplasm. In addition, we will use a reverse genetics approach to identify the genetic basis of these two key heat tolerance traits and obtain new induced alleles. CIMMYT and NBPGR materials will be screened at the DNA level at Arcadia by TILLING candidate genes that affect membrane function and thermotolerance.

Another major impact of heat directly linked to yield loss is the shortening of the grain-filling period, which is characterized by a rapid increase in starch accumulation. Heat stress during grain filling reduces starch accumulation as much as 58% by reducing the expression of multiple enzymes involved in starch biosynthesis. Arcadia will aim to counteract this effect—the

regulated reduction of sink strength under heat stress—by increasing the expression and stability of enzymes in the starch synthesis pathway of reproductive tissues through both TILLING and transgenic approaches.

By the end of this five-year program, partners will have identified and confirmed, through extensive phenotyping, a set of elite genetic resources with respect to novel heat tolerance mechanisms and will have established a climate-ready wheat breeding pipeline with the first products in preliminary yield trials. Following the grant period, we anticipate additional trials in more locations and on combinations of these new technologies to determine optimal levels of heat tolerance in diverse geographies. Arcadia will develop the protein safety data package that would be required in common across global markets for any transgenic traits and make this available to CIMMYT.

Commercialization of new heat tolerant wheat technologies will then occur in parallel by both CIMMYT and its national partners, and by Arcadia Biosciences and its commercial partners. Reflecting the value of USAID's public investment and CIMMYT's co-development, Arcadia will provide CIMMYT rights in developing countries to new heat tolerant wheat technologies that may be derived from Arcadia intellectual property. Thus, CIMMYT will take forward new breeding products that arise from its germplasm screens as well as any TILLING and transgenic technologies that arise from Arcadia's effort. CIMMYT will make these available to national programs to introgress into locally adapted varieties. In parallel, Arcadia will pursue commercial opportunities globally for new TILLING and transgenic technologies. Arcadia will retain exclusive commercial rights to any of its own intellectual property in developed countries.

DETAILED PROGRAM DESCRIPTION

Here we propose a program of collaborative research to develop new heat tolerant wheat lines. We will apply several technical strategies that address physiological processes known to be affected by heat stress in wheat. CIMMYT and Arcadia bring complementary technical resources to this effort. This combination will increase the likelihood of a significant breakthrough over each organization working alone.

As a partner in this program, USAID plays a critical role in facilitating this alliance. The Agency will provide resources to enable CIMMYT and NBPGR to expand their efforts in germplasm screening and to conduct field tests of novel lines coming from Arcadia. USAID support will entice Arcadia to expand exploratory research on this target trait in wheat. In exchange, this program will leverage Arcadia's investment during and beyond the life of the grant and provide public sector access to intellectual property in the commercially valuable wheat market of South Asia.

GOAL AND OBJECTIVE

The goal of this collaboration is to increase the incomes of farmers by developing new varieties of wheat that have higher yields under average and heat stressed conditions. The target is to add value to farmers both in advanced economies such as North America and Europe as well as

to small farmers in developing countries, thus leveraging both commercial and development investment.

By the end of the proposed five-year grant, Arcadia and CIMMYT expect to develop and conduct field trials of new wheat lines with the potential for increased yield. Following this initial demonstration of efficacy, Arcadia will continue commercial investment and development of technologies in collaboration with its global seed company partners and provide technical support to CIMMYT as needed. Through the Borlaug Institute for South Asia and programs such as the Cereal Systems Initiative for South Asia, CIMMYT will also take technologies forward in developing countries through its partnerships with national programs.

If the technical strategies are successful, similar TILLING and transgenic approaches could be applied to rice, the largest global staple, which, as wheat, experiences negative yield impacts by heat stress during grain-filling.

BACKGROUND

Among major staple crops, global wheat yields may be the hardest hit according to a number of climate change models. And while wheat is the most drought-adapted of major crops, improving heat adaptation would make wheat a climate resilient staple. Developing countries are both significant producers and importers of wheat. An estimated 1.2 billion poor people—the majority of whom live in South Asia—depend on wheat. As much as 80% of wheat in the developing world is produced and consumed in the same country (Ortiz *et al.*, 2008). At the same time, wheat accounts for 43% of food imports in developing countries, underscoring the importance of global wheat trade to food security. Demand for wheat is projected to increase by 60% by 2050 in developing countries. As we saw with the global food price crisis in 2008, poor yields in major wheat exporting countries such as Australia can have a significant impact on global prices and disproportionately harmful impact on the poor.

Wheat has been shown to lose 3—4% of yield per °C above the optimum daytime temperature of 15°C (Wardlaw *et al.*, 1989). Since the 1980s, global wheat productivity is estimated to have been reduced by as much as 5% (Lobell *et al*., 2011) due to increasing temperature, and wheat yields in South Asia could decline as much as 50% by 2050 (IFPRI, 2009). Recent research in India suggests that most crop models have underestimated the impact of extreme heat by as much as 50% (Lobell *et al*., 2012).

Development of more heat tolerant varieties of wheat aligns Arcadia's business interests and those of USAID and CIMMYT in poverty reduction and food security. Arcadia has significant commercial partnerships and investments focused on developing new technologies in wheat for global markets. CIMMYT is the leader in wheat germplasm improvement for developing countries. Through combined public investment and co-development, this partnership will expand and accelerate progress on delivering significant advances in heat tolerance. CIMMYT will gain the rights in developing countries to heat tolerant wheat innovations developed by the private sector partner, including the valuable South Asian market.

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

PARTNERS AND THEIR RESOURCES

To this collaborative effort, Arcadia will bring commercial product development expertise, technical resources for generation of transgenic wheat lines, a world-class wheat TILLING germplasm resource, expertise in identification of novel alleles through TILLING, and concepts for TILLING and transgenic targets for heat tolerance. Critically, Arcadia will also bring commercial investment to this partnership both during the life of the grant and through investment in the regulatory package for any transgenic technologies that arise from this collaboration. Arcadia will share this regulatory data and collaborate with CIMMYT in taking products forward in developing countries. In exchange for USAID support and CIMMYT's technical assistance, Arcadia will provide CIMMYT with commercial rights in developing countries to technologies developed by Arcadia under this project. The estimated value of Arcadia investment in this project is over [...*...] in cash investment. Arcadia will commit to leverage several additional investments: regulatory data for one new transgenic product—estimated at [...*...] a proprietary wheat TILLING resource with an estimated value of [...*...] and an estimated [...*...] in revenue from our intellectual property rights in providing CIMMYT with rights to commercialize Arcadia technologies that arise from this program in the major wheat markets of South Asia (India is the global leader in wheat acreage).

CIMMYT will bring several major benefits to this collaboration including: (1) Access to ~80,000 accessions of wheat genetic resources housed in the World Wheat Collection in Mexico that are currently being pre-screened for favorable growth characteristics at high temperature; (2) High throughput phenotyping technologies that have been specifically designed for genetic resource screening and large-scale breeding; (3) Expertise in physiological breeding for abiotic stressed environments that has already resulted a new generation of advanced lines based on the pyramiding of stress adaptive traits; and (4) A product delivery and uptake pathway defined by the International Wheat Improvement Network (IWIN) which has a legacy of over 40 years of germplasm sharing and well-documented impacts in terms of productivity gains for impoverished farmers (Evenson and Gollin, 2003)

The NBPGR of India will provide the following key components to this project: (1) Expertise in genetic resource utilization; (2) Access to ~20,000 wheat accessions that will have been pre-screened for favorable growth characteristics at high temperature; (3) Access to field screening locations situated within major wheat breeding target locations representing over 20 million hectares of wheat either experiencing or at risk of the detrimental effects of heat stress; and (4) Analogue sites, or 'hot-spots' where selection can be made for future climate scenarios. NBPGR will also reach out to the Directorate of Wheat Research to collaborate in this screening effort in India.

USAID will play several important roles: the provision of funding to defray potential lost revenue to the private sector partner and to stimulate all parties to expand or accelerate their efforts, and the provision of strategic guidance in linking commercial and development objectives. Funding from USAID has been a significant factor in Arcadia's decision to invest in heat tolerant wheat and to enter into this partnership with CIMMYT. Success from this seed funding will likely lead to very significant further investment by Arcadia and its commercial partners, beyond that

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

estimated here, to further commercially develop these products, in markets that will include South Asia. Public funding has been a key to Arcadia's ability to forego significant potential revenue in South Asia by allowing CIMMYT freedom to operate in that valuable wheat market. The USAID's funding will allow CIMMYT to purchase equipment to improve and expand germplasm screening and will allow CIMMYT, Arcadia, and NBPGR to hire additional technicians to increase their levels of effort on heat tolerance. With many years of experience with regulatory policies and partnerships in India, USAID will provide technical advice to the partners in taking any transgenic technologies forward in the target countries.

TECHNICAL APPROACH

Heat stress in wheat growing environments typically occurs either as chronic increased temperature or as extreme heat shock. Chronic temperature stress accelerates development rate and inhibits key metabolic processes. This reduces the size of plant organs and, ultimately, reduces yield. Extreme shocks can trigger premature senescence resulting in potentially drastic and unpredictable yield losses (Wardlaw *et al.*, 1994).

Only modest genetic gains in yield in heat stressed environments have been achieved to date (Lillemo, *et al.*, 2005; Lopes *et al.*, 2012). Our limited understanding of the complex interaction of cellular and molecular mechanisms with whole plant adaptation has restricted breakthroughs in breeding for heat tolerance. [...*...]

CIMMYT's Wheat Physiology group has pioneered a number of high throughput phenotyping methodologies that have been applied in breeding and gene discovery (Reynolds *et al*., 2009; Salekdeh *et al*., 2009). For this project we shall adapt two published methodologies for high throughput screening protocols. [...*...]

Diverse germplasm for screening will come from four different sources:

1) 100 highly promising elite lines [...*...] based on agronomic and physiological characterization of hundreds of [...*...] wheat breeding lines ([...*...]).

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT

2) 1,000 lines [...*...] selected from large scale screening of ~80,000 accessions of the World Wheat Collection housed at CIMMYT (SeeD).
3) 294 genotypes from the Wheat Association Mapping Initiative (WAMI) panel that have been evaluated by national program collaborators in major wheat growing environments worldwide (Lopes *et al*., 2012), many of which encompass heat stress (e.g. Bangladesh, India, Mexico, Sudan, Texas).
4) 1,000 lines [...*...] by the NBPRG resulting from a screen of more than 20,000 wheat accessions under the National Initiative on Climate Resilient Agriculture.

NBPGR will analyze the results of the screening (in 2012) of its 20,000 germplasm accessions in order to select the best heat adapted candidates for this project. Approximately 350 of these selected lines will be screened annually for [...*...] for a total of 1,000 lines screened by the end of the project. In addition, screening of the best [...*...] of lines will be repeated in a second cycle [...*...] as well as of the selections made in [...*...] from previous cycles. NPBGR will also send the best [...*...] of lines screened [...*...] for CIMMYT to use in the climate ready wheat crossing program.

Germplasm identified through CIMMYT's phenotypic screening will be used immediately in breeding (for details see work plan). We will also employ a reverse genetics approach to identify the genetic basis of [...*...] and obtain new induced alleles. CIMMYT materials will be screened at the DNA level at Arcadia by TILLING candidate genes that affect [...*...]

Pioneered by Arcadia scientist Dr. Claire McCallum, TILLING is a non-GM technology that combines advances in molecular biology with functional genomics to accelerate crop improvement (McCallum 2000). TILLING uses mutagenesis to induce novel DNA variation in elite germplasm. TILLING can also be used to screen existing germplasm for diversity in candidate genes associated with a trait of interest, [...*...] in order to link an observed phenotype with a genetic change. [...*...]

TILLING is particularly advantageous for breeding new traits in hexaploid wheat since it often requires genetic homozygosity of three similar genes from each of the A, B and D genomes before a phenotype can be observed. Using TILLING, alterations of each of these genes can be identified separately and then combined through breeding to achieve a new trait not previously available in wheat germplasm. Arcadia's high-throughput TILLING capacity and wheat experience allows an entire library of [...*...] to be screened for a single gene target [...*...]

In addition to [...*...] a second major impact of heat directly linked to yield loss [...*...]

[...*...]

We will use Arcadia's high-throughput TILLING population in wheat to [...*...]

Arcadia will identify novel alleles [...*...]

A third target, [...*...]

[...*...]

CIMMYT and Arcadia will conduct field tests of the TILLING and transgenic materials [...*...] in collaboration with the NBPGR. [...*...] CIMMYT will collaborate with the National Bureau of Plant Genetic Resources. In Year 2 and beyond, CIMMYT will conduct breeding work to incorporate heat tolerance sources into the appropriate agronomic backgrounds for deployment in different wheat agro-ecosystems in the developing world, either currently affected, or predicted to be affected, by heat stress.

ANTICIPATED IMPACT AND RESULTS

The impact of a 10% yield gain due to greater heat tolerance in wheat would be $120 per hectare of increased value to South Asian farmers in Bangladesh, Pakistan, Nepal, and India. This will contribute to the Feed the Future Intermediate Result of Improved Agricultural Productivity as measured through increased gross margin per unit of land. No significant changes in management practices or other input costs are anticipated in the use of heat tolerant wheat seed varieties. Thus, these technologies should increase gross margins directly by increasing yields.

When commercialized, the technologies arising from this collaboration will contribute to the number of hectares under improved technologies as a result of USAID assistance. The lines arising from germplasm screens and TILLING would be ready for introgression into local varieties starting [...*...] with commercialization [...*...]. Transgenic materials would need to undergo regulatory approval prior to extensive introgression and thus would be commercialized subsequently.

During the grant period itself, the proposed project will move several technologies through the stages of research and development. It is estimated that at the end of the grant period, we will achieve the following results:

- [...*...]
- It is estimated all of these will have undergone field testing.

PATHWAY TO COMMERCIALIZATION

As all parties will have non-exclusive rights to commercialize technologies in South Asia, it is expected that there will be parallel commercialization paths. [...*...]

The germplasm from the project will be distributed [...*...] by the International Wheat Improvement Network (IWIN) which has a legacy of over 40 years of germplasm sharing and well documented impacts in terms of productivity gains for impoverished farmers (Evenson and Gollin, 2003). [...*...] the germplasm will be

distributed by the National Wheat Program for multi-location yield testing. Following appropriate approval processes, material will be disseminated widely, including to private seed companies, extension services and farmer organizations.

TECHNICAL AND FINANCIAL FEASIBILITY

The technical approach outlines above provides the data supporting this approach, combined with the discussion of the expertise and roles of each partner, addresses the technical feasibility. The cash investment of the private sector partner described above and the budget narrative provide evidence of the financial feasibility.

DURATION AND IMPLEMENTATION TIMELINE

We propose a five-year project. [...*...]

Annex A includes the timeline of major research activities and milestones and below a more detailed discussion.

Activities in Year 1 (October 2012 to September 2013)

Planning

Year 1 will begin with a planning meeting involving all partners leading to the establishment of experimental procedures, work plans, and timelines for the rest of the project. The following issues will be addressed:

[...*...]

[...*...]

[...*...]

[...*...]

SUSTAINABILITY BEYOND LIFE OF GRANT

The value of heat tolerance in wheat in North America, Australia, and Europe will drive Arcadia’s investment to commercialize promising technologies that arise from this grant. [...*...]

Similarly, CIMMYT has the extensive experience and associations with public and private seed channels in South Asia necessary to develop and release new varieties that will arise from this collaboration. The establishment of the Borlaug Institute for South Asia is evidence of CIMMYT's extensive presence in the target region. As a Public International Organization, and given the alignment with the new Wheat Global Alliance, CIMMYT expects to have additional resources to support the continued development and extension of technologies arising from the proposed grant.

PLANNING MATRIX

The proposed program is a focused effort around research and thus will not require a complex set of indicators of progress and measurement tools. The Implementation Timeline in Annex A above provides a matrix of activities and timelines for reporting progress against the appropriate Feed the Future indicators have been indicated. A discussion of these indicators is also provided in the following section on Monitoring and Evaluation.

MONITORING AND EVALUATION

As outlined in the section on Anticipated Impact and Results, upon commercialization of

products from this project, we expect to contribute to the Feed the Future Intermediate Result of Improved Agricultural Productivity. During the grant period, we will report results under the Sub-Intermediate Results 1.2 and 3.

Specifically, under 1.2: Enhanced Technology Development, Dissemination, Management and Innovation, we will have technologies under both Phase I and II. As the project will be developing a number of distinct approaches to heat tolerance, we will define a "technology" as each genetically segregating line selected in germplasm screens, progeny of breeding, each allele identified through TILLING, and each transgene target. We will report the number of technologies in both phases. [...*...]

This project is a public-private partnership and thus will contribute to Intermediate Result 3 in the first year, as measured by the number of public-private partnerships formed. After the grant period when technologies are ready for commercialization, it is expected there will be additional public-private partnerships through CIMMYT and its national partners.

ROLE OF USAID SUPPORT

The role of USAID support is addressed in the section on the role of the partners and in the draft MOU. The specifics applications of the financial support requested from USAID are detailed in the technical approach and budget narrative.

GENDER CONSIDERATIONS

The long-term development impacts of this project are expected to equally benefit men and women from diverse social groups dependent on wheat farming. In addition to this, the development of wheat varieties with improved heat tolerance is also expected to contribute towards increased incomes at farm household level.

From a technology development perspective, the results of this project will provide the basis for further efforts to combine improved heat tolerance with other combinations of traits in wheat to address the specific needs and preferences of men and women wheat farmers and consumers in diverse socio-economic and agro-ecological contexts.

For the proposed activities, the issue of gender considerations is found to be relevant primarily in relation to staffing and professional development as well as other workplace-related aspects. The applicants are committed to equal opportunity principles and will ensure that recruitment and professional development opportunities take gender equity into account as appropriate.

STAFFING AND MANAGEMENT PLAN

The key staff at Arcadia include: [...*...] The CVs of these

principals are provided in the Annex.

The overall coordinator for the CIMMYT operation, including liaison with NBPGR and Arcadia will be [...*...]. An Associate Scientist will be appointed to run the experiments with a small team of technicians in Mexico, to ensure coordination of experiments and germplasm exchange with Arcadia and NBPGR, and to analyze and report data. Crossing and germplasm selection will be conducted in collaboration with a pre-breeder (to be appointed) dedicated to germplasm improvement under heat and drought stress. The CV of [...*...] is provided in the Annex. The coordinator of [...*...] Director of NBPGR.

The parties to this partnership — Arcadia, CIMMYT, NBPGR, and USAID — will form a joint program management committee composed of equal representation from each organization. The program management committee shall meet, in person or by conference call, twice a year to determine collaborative activities, establish work plans detailing those activities and the timeline for completion of the same, review progress against the work plan, and determine how to best move the project forward.

EXPERIENCE OF PARTNERS

Wheat is a core crop for Arcadia investment and we have existing transgenic and TILLING wheat research and seed company partners in all major markets. Arcadia has expertise in TILLING of starch pathways through development of a high-fiber white wheat product. We are also developing a non-transgenic herbicide tolerant wheat, and low gluten wheat through TILLING. We have partnered with USAID on the development of abiotic stress tolerant rice and wheat for South Asia. Through the African Agricultural Technology Foundation, Arcadia will deliver African rice varieties with our NUE, WUE, and salt tolerance technologies.

CIMMYT is the leading developer of wheat germplasm for developing countries. An estimated 80 percent of spring bread wheat in developing countries is planted to varieties containing CIMMYT germplasm. CIMMYT leads the International Wheat Yield Consortium and is a member of the International Triticeae Mapping Initiative. With the establishment of the Borlaug Institute for South Asia, CIMMYT has deepened its already strong roots with public and private institutions in the target region. CIMMYT co-leads the new CGIAR Research Program, WHEAT, where heat tolerance is among the top objectives. In addition to core support from USAID, CIMMYT has had many special projects with USAID, including the Cereal Systems Initiative for South Asia, CSISA.

I. Conclusion, Summary Statement

The partnership between Arcadia Biosciences, CIMMYT and NBPGR creates a powerful consortium of leading experts to collectively develop and advance new wheat technologies with improved tolerance to heat coupled by increased yield through improved grain filling. Arcadia has the research capacity and experience in developing new transgenic crops and identifing new varieties through the TILLING platform. Promising germplasms will then subsequently be field

tested by CIMMYT and NBPGR. Arcadia has the expertise to help facilitate the commercialization and dissemination of new varieties through previous experience working with India as well as meeting requirements for biosafety approvals. All participants in this partnership have a long history of working in the development and commercialization of wheat, some participating in other ongoing projects currently supported by USAID.

-END OF PROGRAM DESCRIPTION-

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

ATTACHMENT C - STANDARD PROVISIONS

I. MANDATORY STANDARD PROVISIONS FOR U.S. NONGOVERNMENTAL ORGANIZATIONS

(See “MANDATORY STANDARD PROVISIONS FOR U.S. NONGOVERNMENTAL ORGANIZATIONS” listed under Mandatory References titled “**Standard Provisions for U.S. Nongovernmental Organizations**” in ADS 303.)

M1. APPLICABILITY OF 22 CFR PART 226 (MAY 2005)

a. All provisions of 22 CFR 226 and all Standard Provisions attached to this agreement are applicable to the recipient and to subrecipients which meet the definition of “Recipient” in part 226, unless a section specifically excludes a subrecipient from coverage. The recipient must assure that subrecipients have copies of all the attached standard provisions.

b. For any subawards made with Non-U.S. subrecipients the recipient must include the applicable “Standard Provisions for Non-US Nongovernmental Organizations.” Recipients are required to ensure compliance with monitoring procedures in accordance with OMB Circular A-133.

[END OF PROVISION]

M2. INELIGIBLE COUNTRIES (MAY 1986)

Unless otherwise approved by the USAID Agreement Officer, funds will only be expended for assistance to countries eligible for assistance under the Foreign Assistance Act of 1961, as amended, or under acts appropriating funds for foreign assistance.

[END OF PROVISION]

M3. NONDISCRIMINATION (JUNE 2012)

No U.S. citizen or legal resident shall be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination on the basis of race, color, national origin, age, disability, or sex under any program or activity funded by this award when work under the grant is performed in the U.S. or when employees are recruited from the U.S.

Additionally, USAID is committed to achieving and maintaining a diverse and representative workforce and a workplace free of discrimination. Based on law, Executive Order, and Agency policy, USAID prohibits discrimination, including harassment, in its own workplace on the basis of race, color, religion, sex (including pregnancy and gender identity), national origin, disability, age, veteran’s status, sexual orientation, genetic information, marital status, parental status, political affiliation, and any other conduct that does not adversely affect the performance of the employee. In addition, the Agency strongly encourages its

recipients and their subrecipients and vendors (at all tiers), performing both in the U.S. and overseas, to develop and enforce comprehensive nondiscrimination policies for their workplaces that include protection for all their employees on these expanded bases, subject to applicable law.

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

[END OF PROVISION]

M4. AMENDMENT OF AWARD (JUNE 2012)

This award may only be amended in writing, by formal amendment or letter, signed by the Agreement Officer (AO), and in the case of a bilateral amendment, by the AO and an authorized official of the recipient.

[END OF PROVISION]

M5. NOTICES (JUNE 2012)

Any notice given by USAID or the recipient is sufficient only if in writing and delivered in person, mailed or e-mailed as follows:

(1) To the USAID Agreement Officer, at the address specified in this award; or

(2) To the recipient, at the recipient's address shown in this award, or to such other address specified in this award.

[END OF PROVISION]

M6. SUBAGREEMENTS (JUNE 2012)

a. Subawardees and contractors have no relationship with USAID under the terms of this award. All required USAID approvals must be directed through the recipient to USAID.

b. Notwithstanding any other term of this award, subawardees and contractors have no right to submit claims directly to USAID and USAID assumes no liability for any third party claims against the recipient.

[END OF PROVISION]

M7. OMB APPROVAL UNDER THE PAPERWORK REDUCTION ACT (DECEMBER 2003)

Information collection requirements imposed by this award are covered by OMB approval number 0412-0510; the current expiration date is 04/30/2005. The Standard Provisions containing the requirement and an estimate of the public reporting burden (including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information) are

Standard Provision	Burden Estimate
Air Travel and Transportation	1(hour)
Ocean Shipment of Goods	.5
Patent Rights	.5
Publications	.5
Negotiated Indirect Cost Rates - (Predetermined and Provisional)	1
Voluntary Population Planning	.5
Protection of the Individual as a Research Subject	1

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

22 CFR 226	Burden Estimate
22 CFR 226.40-.49, Procurement of Goods and Services	1
22 CFR 226.30 -.36, Property Standards	1.5

Comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, may be sent to the Office of Acquisition and Assistance, Policy Division (M/OAA/P), U.S. Agency for International Development, Washington, DC 20523-7801 and to the Office of Management and Budget, Paperwork Reduction Project (0412-0510), Washington, DC 20503.

[END OF PROVISION]

M8. USAID ELIGIBILITY RULES FOR GOODS AND SERVICES (JUNE 2012)

a. This provision is not applicable to commodities or services that the recipient provides with private funds as part of a cost-sharing requirement, or with Program Income generated under this award.

b. Ineligible and Restricted Commodities and Services:

(1) Ineligible Commodities and Services. The recipient must not, under any circumstances, procure any of the following under this award:

(i) Military equipment,
(ii) Surveillance equipment,
(iii) Commodities and services for support of police or other law enforcement activities,
(iv) Abortion equipment and services,
(v) Luxury goods and gambling equipment, or
(vi) Weather modification equipment.

(2) Ineligible Suppliers. Any firms or individuals that do not comply with the requirements in Standard Provision, "Debarment, Suspension and Other Responsibility Matters" and Standard Provision, "Preventing Terrorist Financing" must not be used to provide any commodities or services funded under this award.

(3) Restricted Commodities. The recipient must obtain prior written approval of the Agreement Officer (AO) or comply with required procedures under an applicable waiver, as provided by the AO when procuring any of the following commodities:

(i) Agricultural commodities,
(ii) Motor vehicles,
(iii) Pharmaceuticals,

(iv) Pesticides,
(v) Used equipment,
(vi) U.S. Government-owned excess property, or
(vii) Fertilizer.

c. Source and Nationality:

Except as may be specifically approved in advance by the AO, all commodities and services that will be reimbursed by USAID under this award must be from the authorized geographic code specified in this award and must meet the source and nationality requirements set forth in 22 CFR 228. If the geographic code is not specified, the authorized geographic code is 937. When the total value of procurement for commodities and services during the life of this award is valued at $250,000 or less, the authorized geographic code for procurement of all goods and services to be reimbursed under this award is code 935. For a current list of countries within each geographic code, see: **http://www.usaid.gov/policy/ads/300/310.pdf**.

M9. DEBARMENT, SUSPENSION, AND OTHER RESPONSIBILITY MATTERS (JUNE 2012)

a. The recipient agrees to notify the Agreement Officer (AO) immediately upon learning that it or any of its principals:

(1) Are presently excluded or disqualified from covered transactions by any Federal department or agency;

(2) Have been convicted within the preceding three-year period preceding this proposal; been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, tax evasion, receiving stolen property, making false claims, or obstruction of justice; commission of any other offense indicating a lack of business integrity or business honesty that seriously and directly affects your present responsibility;

(3) Are presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State, or local) with commission of any of the offenses enumerated in paragraph a.(2); and

(4) Have had one or more public transactions (Federal, State, or local) terminated for cause or default within the preceding three years.

b. The recipient agrees that, unless authorized by the AO, it will not knowingly enter into any subagreements or contracts under this award with a person or entity that is included on the Excluded Parties List System (**www.epls.gov**/). The recipient further agrees to include the

following provision in any subagreements or contracts entered into under this award:

DEBARMENT, SUSPENSION, INELIGIBILITY, AND VOLUNTARY EXCLUSION (JUNE 2012)

The recipient/contractor certifies that neither it nor its principals is presently excluded or disqualified from participation in this transaction by any Federal department or agency.

c. The policies and procedures applicable to debarment, suspension, and ineligibility under USAID-financed transactions are set forth in Subpart C of 2 CFR Section 180, as supplemented by 2 CFR 780.

[END OF PROVISION]

M10. DRUG-FREE WORKPLACE (JUNE 2012)

a. The recipient must comply with drug-free workplace requirements in subpart B (or subpart C, if the recipient is an individual) of 2 CFR 782, which adopts the Government-wide implementation (2 CFR part 182) of sec. 5152—5158 of the Drug-Free Workplace Act of 1988 (Pub. L. 100—690, Title V, Subtitle D; 41 U.S.C. 701—707).

[END OF PROVISION]

M11. EQUAL PARTICIPATION BY FAITH-BASED ORGANIZATIONS (JUNE 2012)

a. Faith-Based Organizations Encouraged.

Faith-based organizations are eligible to compete on an equal basis as any other organization to participate in USAID programs. Neither USAID nor entities that make and administer subawards of USAID funds will discriminate for or against an organization on the basis of the organization's religious character or affiliation. A faith-based organization may continue to carry out its mission, including the definition, practice, and expression of its religious beliefs, within the limits contained in this provision. More information can be found at the USAID Faith-Based and Community Initiatives Web site: http://transition.usaid.gov/our_work/global_partnerships/fbci/ and 22 CFR 205.1.

b. Inherently Religious Activities Prohibited.

(1) Inherently religious activities include, among other things, worship, religious instruction, prayer, or proselytization.

(2) The recipient must not engage in inherently religious activities as part of the programs or services directly funded with financial assistance from USAID. If the recipient engages in inherently religious activities, it must offer those services at a different time or location from any programs or services directly funded by this award, and participation by beneficiaries in any such inherently religious activities must be voluntary.

(3) These restrictions apply equally to religious and secular organizations. All organizations that participate in USAID programs, including religious ones, must carry out eligible activities in accordance with all program requirements and other applicable requirements governing USAID-funded activities.

(4) These restrictions do not apply to USAID-funded programs where chaplains work with inmates in prisons, detention facilities, or community correction centers, or where USAID funds are provided to religious or other organizations for programs in prisons, detention facilities, or community correction centers, in which such organizations assist chaplains in carrying out their duties.

(5) Notwithstanding the restrictions of b.(1) and (2), a religious organization that participates in USAID-funded programs or services

(i) Retains its independence and may continue to carry out its mission, including the definition, practice, and expression of its religious beliefs, provided that it does not use direct financial assistance from USAID to support any inherently religious activities,

(ii) May use space in its facilities, without removing religious art, icons, scriptures, or other religious symbols, and

(iii) Retains its authority over its internal governance, and it may retain religious terms in its organization's name, select its board members on a religious basis, and include religious references in its organization's mission statements and other governing documents.

c. Construction of Structures Used for Inherently Religious Activities Prohibited. The recipient must not use USAID funds for the acquisition, construction, or rehabilitation of structures to the extent that those structures are used for inherently religious activities, such as sanctuaries, chapels, or other rooms that the recipient uses as its principal place of worship. Except for a structure used as its principal place of worship, where a structure is used for both eligible and inherently religious activities, USAID funds may not exceed the cost of those portions of the acquisition, construction, or rehabilitation that are attributable to eligible activities.

d. Discrimination Based on Religion Prohibited. The recipient must not discriminate against any beneficiary or potential beneficiary on the basis of religion or religious belief as part of the programs or services directly funded with financial assistance from USAID.

e. A religious organization's exemption from the Federal prohibition on employment discrimination on the basis of religion, set forth in Sec. 702(a) of the Civil Rights Act of 1964, 42 U.S.C. 2000e—1 is not forfeited when the organization receives financial assistance from USAID.

f. The Secretary of State may waive the requirements of this section in whole or in part, on a

case-by-case basis, where the Secretary determines that such waiver is necessary to further the national security or foreign policy interests of the United States.

[END OF PROVISION]

M12. PREVENTING TERRORIST FINANCING — IMPLEMENTATION OF E.O. 13224 (JUNE 2012)

a. The recipient is reminded that U.S. Executive Orders and U.S. law prohibits transactions with, and the provision of resources and support to, individuals and organizations associated with terrorism. The recipient must not engage in transactions with, or provide resources or support to, individuals and organizations associated with terrorism. In addition, the recipient must verify that no support or resources are provided to individuals or entities that appear on the Specially Designated Nationals and Blocked Persons List maintained by the U.S. Treasury (online at: http://www.treasury.gov/resource-center/sanctions/SDN-List/Pages/default.aspx) or the United Nations Security designation list (online at: http://www.un.org/sc/committees/1267/aq_sanctions_list.shtml).

b. This provision must be included in all subagreements, including contracts and subawards, issued under this award.

[END OF PROVISION]

M13. MARKING AND PUBLIC COMMUNICATIONS UNDER USAID-FUNDED ASSISTANCE (JUNE 2012)

a. The USAID Identity is the official marking for USAID, comprised of the USAID logo and brandmark with the tagline “from the American people.” The USAID Identity is on the USAID Web site at www.usaid.gov/branding. Recipients must use the USAID Identity, of a size and prominence equivalent to or greater than any other identity or logo displayed, to mark the following:

(1) Programs, projects, activities, public communications, and commodities partially or fully funded by USAID;

(2) Program, project, or activity sites funded by USAID, including visible infrastructure projects or other physical sites;

(3) Technical assistance, studies, reports, papers, publications, audio-visual productions, public service announcements, Web sites/Internet activities, promotional, informational, media, or communications products funded by USAID;

(4) Commodities, equipment, supplies, and other materials funded by USAID, including commodities or equipment provided under humanitarian assistance or disaster relief programs; and

(5) Events financed by USAID, such as training courses, conferences, seminars, exhibitions, fairs, workshops, press conferences and other public activities. If the USAID Identity cannot be displayed, the recipient is encouraged to otherwise

acknowledge USAID and the support of the American people.

b. When this award contains an approved Marking Plan, the recipient must implement the requirements of this provision following the approved Marking Plan.

c. If a “Marking Plan” is not included in this award, the recipient must propose and submit a plan for approval within the time specified by the Agreement Officer (AO).

d. The AO may require a preproduction review of program materials and “public communications” (documents and messages intended for external distribution, including but not limited to correspondence; publications; studies; reports; audio visual productions; applications; forms; press; and promotional materials) used in connection with USAID-funded programs, projects or activities, for compliance with an approved Marking Plan.

e. The recipient is encouraged to give public notice of the receipt of this award and announce progress and accomplishments. The recipient must provide copies of notices or announcements to the Agreement Officer’s Representative (AOR) and to USAID’s Office of Legislative and Public Affairs in advance of release, as practicable. Press releases or other public notices must include a statement substantially as follows:

“The U.S. Agency for International Development administers the U.S. foreign assistance program providing economic and humanitarian assistance in more than 80 countries worldwide.”

f. Any “public communication” in which the content has not been approved by USAID must contain the following disclaimer:

“This study/report/audio/visual/other information/media product (specify) is made possible by the generous support of the American people through the United States Agency for International Development (USAID). The contents are the responsibility of [insert recipient name] and do not necessarily reflect the views of USAID or the United States Government.”

g. The recipient must provide the USAID AOR, with two copies of all program and communications materials produced under this award.

h. The recipient may request an exception from USAID marking requirements when USAID marking requirements would:

(1) Compromise the intrinsic independence or neutrality of a program or materials where independence or neutrality is an inherent aspect of the program and materials;

(2) Diminish the credibility of audits, reports, analyses, studies, or policy recommendations whose data or findings must be seen as independent;

(3) Undercut host-country government "ownership" of constitutions, laws, regulations, policies, studies, assessments, reports, publications, surveys or audits, public service

announcements, or other communications;

(4) Impair the functionality of an item;

(5) Incur substantial costs or be impractical;

(6) Offend local cultural or social norms, or be considered inappropriate; or

(7) Conflict with international law.

i. The recipient may submit a waiver request of the marking requirements of this provision or the Marking Plan, through the AOR, when USAID-required marking would pose compelling political, safety, or security concerns, or have an adverse impact in the cooperating country.

(1) Approved waivers "flow down" to subagreements, including subawards and contracts, unless specified otherwise. The waiver may also include the removal of USAID markings already affixed, if circumstances warrant.

(2) USAID determinations regarding waiver requests are subject to appeal by the recipient, by submitting a written request to reconsider the determination to the cognizant Assistant Administrator.

j. The recipient must include the following marking provision in any subagreements entered into under this award:

"As a condition of receipt of this subaward, marking with the USAID Identity of a size and prominence equivalent to or greater than the recipient's, subrecipient's, other donor's, or third party's is required. In the event the recipient chooses not to require marking with its own identity or logo by the subrecipient, USAID may, at its discretion, require marking by the subrecipient with the USAID Identity."

[END OF PROVISION]

M14. REGULATIONS GOVERNING EMPLOYEES (AUGUST 1992)

(The following applies to the recipient's employees working in the cooperating country under the agreement who are not citizens of the cooperating country.)

a. The recipient's employees must maintain private status and may not rely on local U.S. Government offices or facilities for support while under this grant.

b. The sale of personal property or automobiles by recipient employees and their dependents in the foreign country to which they are assigned are subject to the same limitations and prohibitions which apply to direct-hire USAID personnel employed by the Mission, including the rules contained in 22 CFR 136, except as this may conflict with host government regulations.

c. Other than work to be performed under this award for which an employee is assigned by the recipient, employees of the recipient must not engage directly or indirectly, either in the individual's own name or in the name or through an agency of another person, in any business, profession, or occupation in the foreign countries to which the individual is assigned. In addition, the individual must not make loans or investments to or in any business, profession, or occupation in the foreign countries to which the individual is assigned.

d. The recipient's employees, while in a foreign country, are expected to show respect for its conventions, customs, and institutions, to abide by its applicable laws and regulations, and not to interfere in its internal political affairs.

e. In the event the conduct of any recipient employee is not in accordance with the preceding paragraphs, the recipient's chief of party must consult with the USAID Mission Director and the employee involved, and must recommend to the recipient a course of action with regard to such employee.

f. The parties recognize the rights of the U.S. Ambassador to direct the removal from a country of any U.S. citizen or the discharge from this grant award of any third country national when, in the discretion of the Ambassador, the interests of the United States so require.

g. If it is determined, either under e. or f. above, that the services of such employee should be terminated, the recipient must use its best efforts to cause the return of such employee to the United States, or point of origin, as appropriate.

[END OF PROVISION]

M15. CONVERSION OF UNITED STATES DOLLARS TO LOCAL CURRENCY (NOVEMBER 1985)

(This provision applies when activities are undertaken outside the United States.)

Upon arrival in the cooperating country, and from time to time as appropriate, the recipient's chief of party must consult with the Mission Director who must provide, in writing, the procedure the recipient and its employees must follow in the conversion of United States dollars to local currency. This may include, but is not limited to, the conversion of currency through the cognizant United States Disbursing Officer or Mission Controller, as appropriate.

[END OF PROVISION]

M16. USE OF POUCH FACILITIES (AUGUST 1992)

(This provision applies when activities are undertaken outside the United States.)

a. Use of diplomatic pouch is controlled by the Department of State. The Department of State has authorized the use of pouch facilities for USAID recipients and their employees as a general policy, as detailed in items (1) through (6) below. However, the final decision regarding use of pouch facilities rest with the Embassy or USAID Mission. In consideration of the use of pouch facilities, the recipient and its employees agree to indemnify and hold harmless, the Department of State and USAID for loss or damage occurring in pouch

transmission:

(1) Recipients and their employees are authorized use of the pouch for transmission and receipt of up to a maximum of .9 kgs per shipment of correspondence and documents needed in the administration of assistance programs.

(2) U.S. citizen employees are authorized use of the pouch for personal mail up to a maximum of .45 kgs per shipment (but see a.(3) below).

(3) Merchandise, parcels, magazines, or newspapers are not considered to be personal mail for purposes of this standard provision and are not authorized to be sent or received by pouch.

(4) Official and personal mail pursuant to a.(1) and (2) above sent by pouch should be addressed as follows:

Name of individual or organization (followed by letter symbol "G")
City Name of post (USAID/)
Agency for International Development
Washington, DC 20523-0001

(5) Mail sent via the diplomatic pouch may not be in violation of U.S. Postal laws and may not contain material ineligible for pouch transmission.

(6) Recipient personnel are NOT authorized use of military postal facilities (APO/FPO). This is an Adjutant General's decision based on existing laws and regulations governing military postal facilities and is being enforced worldwide.

b. The recipient is responsible for advising its employees of this authorization, these guidelines, and limitations on use of pouch facilities.

c. Specific additional guidance on grantee use of pouch facilities in accordance with this standard provision is available from the Post Communication Center at the Embassy or USAID Mission.

[END OF PROVISION]

M17. TRAVEL AND INTERNATIONAL AIR TRANSPORTATION (JUNE 2012)

a. PRIOR BUDGET APPROVAL

Direct charges for travel costs for international air travel by individuals are allowable only when each international trip has received prior budget approval. Such approval is met when all of the following are met:

(1) The trip is identified by providing the following information: the number of trips, the number of individuals per trip, and the origin and destination countries or regions;

(2) All of the information noted at a.(1) above is incorporated in the Schedule of this award or amendments to this award; and

(3) The costs related to the travel are incorporated in the budget of this award.

The Agreement Officer (AO) may approve, in writing, international travel costs that have not been incorporated in this award. To obtain AO approval, the recipient must request approval at least three weeks before the international travel, or as far in advance as possible. The recipient must keep a copy of the AO's approval in its files. No other clearance (including country clearance) is required for employees of the recipient, its subrecipients or contractors. International travel by employees who are not on official business of the recipient, such as rest and recuperation (R&R) travel offered as part of an employee's benefits package, must be consistent with the recipient's personnel and travel policies and procedures and does not require approval.

b. TRAVEL COSTS

All travel costs must comply with the applicable cost principles and must be consistent with those normally allowed in like circumstances in the recipient's non-USAID-funded activities. Costs incurred by employees and officers for travel, including air fare, costs of lodging, other subsistence, and incidental expenses, may be considered reasonable and allowable only to the extent such costs do not exceed charges normally allowed by the non-profit organization in its regular operations as the result of the non-profit organization's written travel policy.

In the absence of a reasonable written policy regarding international travel costs, the standard for determining the reasonableness of reimbursement for international travel costs will be the Standardized Regulations (Government Civilians, Foreign Areas), published by the U.S. Department of State, as from time to time amended. The most current Standardized Regulations on international travel costs may be obtained from the AO. In the event that the cost for air fare exceeds the customary standard commercial airfare (coach or equivalent) or the lowest commercial discount airfare, the recipient must document one of the allowable exceptions from the applicable cost principles.

c. FLY AMERICA ACT RESTRICTIONS

(1) The recipient must use U.S. Flag Air Carriers for all international air transportation (including personal effects) funded by this award pursuant to the Fly America Act and its implementing regulations to the extent service by such carriers is available.

(2) In the event that the recipient selects a carrier other than a U.S. Flag Air Carrier for international air transportation, in order for the costs of such international air transportation to be allowable, the recipient must document such transportation in accordance with this provision and maintain such documentation pursuant to the Standard Provision, "Accounting, Audit and Records." The documentation must use one of the following reasons or other exception under the Fly America Act:

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

(i) The recipient uses a European Union (EU) flag air carrier, which is an airline perating from an EU country that has signed the US-EU "Open Skies" agreement (http://www.state.gov/e/eb/rls/othr/ata/i/ic/170684.htm).

(ii) Travel to or from one of the following countries on an airline of that country when no city pair fare is in effect for that leg (see http://apps.fas.gsa.gov/citypairs/search/):

a. Australia on an Australian airline,
b. Switzerland on a Swiss airline, or
c. Japan on a Japanese airline;

(iii) Only for a particular leg of a route on which no US Flag Air Carrier provides service on that route;

(iv) For a trip of 3 hours or less, the use of a US Flag Air Carrier at least doubles the travel time;

(v) If the US Flag Air Carrier offers direct service, use of the US Flag Air Carrier would increase the travel time by more than 24 hours; or

(vi) If the US Flag Air Carrier does <u>not</u> offer direct service,

a. Use of the US Flag Air Carrier increases the number of aircraft changes by 2 or more,

b. Use of the US Flag Air Carrier extends travel time by 6 hours or more, or

c. Use of the US Flag Air Carrier requires a layover at an overseas interchange of 4 hours or more.

d. DEFINITIONS

The terms used in this provision have the following meanings:

(1) "Travel costs'' means expenses for transportation, lodging, subsistence (meals and incidentals), and related expenses incurred by employees who are on travel status on official business of the recipient for any travel outside the country in which the organization is located. "Travel costs" do not include expenses incurred by employees who are not on official business of the recipient, such as rest and recuperation (R&R) travel offered as part of an employee's benefits package that are consistent with the recipient's personnel and travel policies and procedures.

(2) "International air transportation" means international air travel by individuals (and their personal effects) or transportation of cargo by air between a place in the United States and a place outside thereof, or between two places both of which are outside the United

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

States.

(3) "U.S. Flag Air Carrier" means an air carrier on the list issued by the U.S. Department of Transportation at http://ostpxweb.dot.gov/aviation/certific/certlist.htm. U.S. Flag Air Carrier service also includes service provided under a code share agreement with another air carrier when the ticket, or documentation for an electronic ticket, identifies the U.S. flag air carrier's designator code and flight number.

(4) For this provision, the term "United States" includes the fifty states, Commonwealth of Puerto Rico, possessions of the United States, and the District of Columbia.

e. SUBAGREEMENTS

This provision must be included in all subagreements, including all subawards and contracts, under which this award will finance international air transportation.

[END OF PROVISION]

M18. OCEAN SHIPMENT OF GOODS (JUNE 2012)

APPLICABILITY: *This provision is applicable for awards and subawards for which the recipient contracts for ocean transportation for goods purchased or financed with USAID funds. In accordance with 22 CFR 228.21, ocean transportation shipments are subject to the provisions of 46 CFR Part 381.*

OCEAN SHIPMENT OF GOODS (JUNE 2012)

a. Prior to contracting for ocean transportation to ship goods purchased or financed with USAID funds under this award, the recipient must contact the office below to determine the flag and class of vessel to be used for shipment:

U.S. Agency for International Development,
Office of Acquisition and Assistance, Transportation Division
1300 Pennsylvania Avenue, NW
Washington, DC 20523-7900
Email: oceantransportation@usaid.gov

b. This provision must be included in all subagreements, including subwards and contracts.

[END OF PROVISION]

M19. VOLUNTARY POPULATION PLANNING ACTIVITIES — MANDATORY REQUIREMENTS (MAY 2006)

Requirements for Voluntary Sterilization Programs

(1) Funds made available under this award must not be used to pay for the performance of involuntary sterilization as a method of family planning or to coerce or provide any financial

incentive to any individual to practice sterilization.

Prohibition on Abortion-Related Activities:

(1) No funds made available under this award will be used to finance, support, or be attributed to the following activities: (i) procurement or distribution of equipment intended to be used for the purpose of inducing abortions as a method of family planning; (ii) special fees or incentives to any person to coerce or motivate them to have abortions; (iii) payments to persons to perform abortions or to solicit persons to undergo abortions; (iv) information, education, training, or communication programs that seek to promote abortion as a method of family planning; and (v) lobbying for or against abortion. The term "motivate," as it relates to family planning assistance, must not be construed to prohibit the provision, consistent with local law, of information or counseling about all pregnancy options.

(2) No funds made available under this award will be used to pay for any biomedical research which relates, in whole or in part, to methods of, or the performance of, abortions or involuntary sterilizations as a means of family planning. Epidemiologic or descriptive research to assess the incidence, extent or consequences of abortions is not precluded.

[END OF PROVISION]

M20. TRAFFICKING IN PERSONS (JUNE 2012)

a. USAID is authorized to terminate this award, without penalty, if the recipient or its employees, or any subrecipient or its employees, engage in any of the following conduct:

(1) Trafficking in persons (as defined in the Protocol to Prevent, Suppress, and Punish Trafficking in Persons, especially Women and Children, supplementing the UN Convention against Transnational Organized Crime) during the period of this award;

(2) Procurement of a commercial sex act during the period of this award; or

(3) Use of forced labor in the performance of this award.

b. For purposes of this provision, "employee" means an individual who is engaged in the performance of this award as a direct employee, consultant, or volunteer of the recipient or any subrecipient.

c. The recipient must include in all subagreements, including subawards and contracts, a provision prohibiting the conduct described in a(1)-(3) by the subrecipient, contractor or any of their employees.

[END OF PROVISION]

M21. SUBMISSIONS TO THE DEVELOPMENT EXPERIENCE CLEARINGHOUSE AND PUBLICATIONS (JUNE 2012)

a. Submissions to the Development Experience Clearinghouse (DEC).

1) The recipient must provide the Agreement Officer's Representative one copy of any Intellectual Work that is published, and a list of any Intellectual Work that is not published.

2) In addition, the recipient must submit Intellectual Work, whether published or not, to the DEC, either on-line (preferred) or by mail. The recipient must review the DEC Web site for submission instructions, including document formatting and the types of documents to submit. Submission instructions can be found at: http://dec.usaid.gov.

3) For purposes of submissions to the DEC, Intellectual Work includes all works that document the implementation, evaluation, and results of international development assistance activities developed or acquired under this award, which may include program and communications materials, evaluations and assessments, information products, research and technical reports, progress and performance reports required under this award (excluding administrative financial information), and other reports, articles and papers prepared by the recipient under the award, whether published or not. The term does not include the recipient's information that is incidental to award administration, such as financial, administrative, cost or pricing, or management information.

4) Each document submitted should contain essential bibliographic information, such as 1) descriptive title; 2) author(s) name; 3) award number; 4) sponsoring USAID office; 5) development objective; and 6) date of publication.

5) The recipient must not submit to the DEC any financially sensitive information or personally identifiable information, such as social security numbers, home addresses and dates of birth. Such information must be removed prior to submission. The recipient must not submit classified documents to the DEC.

b. In the event award funds are used to underwrite the cost of publishing, in lieu of the publisher assuming this cost as is the normal practice, any profits or royalties up to the amount of such cost must be credited to the award unless the schedule of the award has identified the profits or royalties as program income.

[END OF PROVISION]

[END OF MANDATORY PROVISIONS]

II. REQUIRED AS APPLICABLE STANDARD PROVISIONS FOR U.S. NONGOVERNMENTAL ORGANIZATIONS

RAA3. NEGOTIATED INDIRECT COST RATE - PROVISIONAL (Profit) (APRIL 1998)

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

APPLICABILITY: *This provision applies to for-profit organizations whose indirect cost rates under this award are on a provisional basis.*

NEGOTIATED INDIRECT COST RATE - PROVISIONAL (Profit) (APRIL 1998)

a. Provisional indirect cost rates must be established for the recipient's accounting periods during the term of this award. Pending establishment of revised provisional or final rates, allowable indirect costs must be reimbursed at the rates, on the bases, and for the periods shown in the schedule of this award. Indirect cost rates and the appropriate bases must be established in accordance with FAR Subpart 42.7.

b. Within six months after the close of the recipient's fiscal year, the recipient must submit to the cognizant agency for audit the proposed final indirect cost rates and supporting cost data. If USAID is the cognizant agency or no cognizant agency has been designated, the recipient must submit three copies of the proposed final indirect cost rates and supporting cost data, to the Overhead, Special Costs, and Closeout Branch, Office of Acquisition and Assistance, USAID, Washington, DC 20523-7802. The proposed rates must be based on the recipient's actual cost experience during that fiscal year. Negotiations of final indirect cost rates must begin soon after receipt of the recipient's proposal.

c. Allowability of costs and acceptability of cost allocation methods must be determined in accordance with the applicable cost principles.

d. The results of each negotiation must be set forth in an indirect cost rate agreement signed by both parties. Such agreement is automatically incorporated into this award and must specify (1) the agreed upon final rates, (2) the bases to which the rates apply, (3) the fiscal year for which the rates apply, and (4) the items treated as direct costs. The agreement must not change any monetary ceiling, award obligation, or specific cost allowance or disallowance provided for in this award.

e. Pending establishment of final indirect cost rates for any fiscal year, the recipient must be reimbursed either at negotiated provisional rates or at billing rates acceptable to the Agreement Officer, subject to appropriate adjustment when the final rates for the fiscal year are established. To prevent substantial overpayment or underpayment, the provisional or billing rates may be prospectively or retroactively revised by mutual agreement.

f. Failure by the parties to agree on final rates is a 22 CFR 226.90 dispute.

[END OF PROVISION]

RAA10. PROHIBITION OF ASSISTANCE TO DRUG TRAFFICKERS (JUNE 1999)

APPLICABILITY: *This provision is applicable where performance of the award will take place in "Covered" Countries, as described in ADS 206 (see 206.5.3).*

PROHIBITION OF ASSISTANCE TO DRUG TRAFFICKERS (JUNE 1999)

a. USAID reserves the right to terminate assistance to, or take other appropriate measures with respect to, any participant approved by USAID who is found to have been convicted of a narcotics offense or

to have been engaged in drug trafficking as defined in 22 CFR 140.

b. (1) For any loan over $1,000 made under this agreement, the recipient must insert a clause in the loan agreement stating that the loan is subject to immediate cancellation, acceleration, recall, or refund by the recipient if the borrower or a key individual of a borrower is found to have been convicted of a narcotics offense or to have been engaged in drug trafficking as defined in 22 CFR 140.

(2) Upon notice by USAID of a determination under section (1) and at USAID's option, the recipient agrees to immediately cancel, accelerate, or recall the loan, including refund in full of the outstanding balance. USAID reserves the right to have the loan refund returned to USAID.

c. (1) The recipient agrees not to disburse, or sign documents committing the recipient to disburse, funds to a subrecipient designated by USAID ("Designated Subrecipient") until advised by USAID that: (i) any United States Government review of the Designated Subrecipient and its key individuals has been completed; (ii) any related certifications have been obtained; and (iii) the assistance to the Designated Subrecipient has been approved. Designation means that the subrecipient has been unilaterally selected by USAID as the subrecipient. USAID approval of a subrecipient, selected by another party, or joint selection by USAID and another party is not designation.

(2) The recipient must insert the following clause, or its substance, in its agreement with the Designated Subrecipient:

"The recipient reserves the right to terminate this [Agreement/Contract] or take other appropriate measures if the [Subrecipient] or a key individual of the [Subrecipient] is found to have been convicted of a narcotic offense or to have been engaged in drug trafficking as defined in 22 CFR 140."

[END OF PROVISION]

RAA11. INVESTMENT PROMOTION (NOVEMBER 2003)

a. Except as specifically set forth in this award or otherwise authorized by USAID in writing, no funds or other support provided hereunder may be used for any activity that involves investment promotion in a foreign country.

b. In the event the recipient is requested or wishes to provide assistance in the above area or requires clarification from USAID as to whether the activity would be consistent with the limitation set forth above, the recipient must notify the Agreement Officer and provide a detailed description of the proposed activity. The recipient must not proceed with the activity until advised by USAID that it may do so.

c. The recipient must ensure that its employees and subrecipients and contractors providing investment promotion services hereunder are made aware of the restrictions set forth in this clause and must include this clause in all contracts and other subagreements entered into hereunder.

[END OF PROVISION]

RAA12. REPORTING HOST GOVERNMENT TAXES (JUNE 2012)

APPLICABILITY*: This provision is applicable to all USAID agreements that obligate or subobligate FY 2003 or later funds except for agreements funded with Operating Expense, Pub. L. 480 funds, or trust funds, or agreements where there will be no commodity transactions in a foreign country over the amount of $500.*

a. By April 16 of each year, the recipient must submit a report containing:

(1) Contractor/recipient name.
(2) Contact name with phone, fax and e-mail.
(3) Agreement number(s).
(4) The total amount of value-added taxes and customs duties (but not sales taxes) assessed by the host government (or any entity thereof) on purchases in excess of $500 per transaction of supplies, materials, goods or equipment, during the 12 months ending on the preceding September 30, using funds provided under this contract/agreement.
(5) Any reimbursements received by April 1 of the current year on value-added taxes and customs duties reported in (4).
(6) Reports are required even if the recipient did not pay any taxes or receive any reimbursements during the reporting period.
(7) Cumulative reports may be provided if the recipient is implementing more than one program in a foreign country.

b. Submit the reports to: U.S. Agency for International Development (USAID)

M/CFO/CMP
SA-44, 1300 Pennsylvania Ave.
Washington, D.C. 20523

With a copy to: USAID AOR of this Agreement.

c. Host government taxes are not allowable where the Agreement Officer provides the necessary means to the recipient to obtain an exemption or refund of such taxes, and the recipient fails to take reasonable steps to obtain such exemption or refund. Otherwise, taxes are allowable in accordance with the Standard Provision, “Allowable Costs,” and must be reported as required in this provision.

d. The recipient must include this reporting requirement in all applicable subagreements, including subawards and contracts.

[END OF PROVISION]

RAA13. FOREIGN GOVERNMENT DELEGATIONS TO INTERNATIONAL CONFERENCES (JUNE 2012)

a. U.S. Government funds under this award must not be used to finance the travel, per diem, hotel expenses, meals, conference fees or other conference costs for any member of a foreign government’s delegation to an international conference sponsored by a multilateral organization, as defined below, unless approved by the Agreement Officer in writing.

b. Definitions:

(1) A foreign government delegation is appointed by the national government (including ministries and agencies but excluding local, state and provincial entities) to act on behalf of the appointing authority at the international conference. A conference participant is a delegate for the purposes of this provision, only when there is an appointment or designation that the individual is authorized to officially represent the government or agency. A delegate may be a private citizen.

(2) An international conference is a meeting where there is an agenda, an organizational structure, and delegations from countries other than the conference location, in which country delegations participate through discussion, votes, etc.

(3) A multilateral organization is an organization established by international agreement and whose governing body is composed principally of foreign governments or other multilateral organizations.

[END OF PROVISION]

RAA17. USAID DISABILITY POLICY - ASSISTANCE (DECEMBER 2004)

a. The objectives of the USAID Disability Policy are (1) to enhance the attainment of United States foreign assistance program goals by promoting the participation and equalization of opportunities of individuals with disabilities in USAID policy, country and sector strategies, activity designs and implementation; (2) to increase awareness of issues of people with disabilities both within USAID programs and in host countries; (3) to engage other U.S. Government agencies, host country counterparts, governments, implementing organizations and other donors in fostering a climate of nondiscrimination against people with disabilities; and (4) to support international advocacy for people with disabilities. The full text of the policy paper can be found at the following Web site: **pdf.usaid.gov/pdf_docs/PDABQ631.pdf**

b. USAID therefore requires that the recipient not discriminate against people with disabilities in the implementation of USAID funded programs and that it make every effort to comply with the objectives of the USAID Disability Policy in performing the program under this grant or cooperative agreement. To that end and to the extent it can accomplish this goal within the scope of the program objectives, the recipient should demonstrate a comprehensive and consistent approach for including men, women, and children with disabilities.

[END OF PROVISION]

RAA18. STANDARDS FOR ACCESSIBILITY FOR THE DISABLED IN USAID ASSISTANCE AWARDS INVOLVING CONSTRUCTION (SEPTEMBER 2004)

a. One of the objectives of the USAID Disability Policy is to engage other U.S. Government agencies, host country counterparts, governments, implementing organizations, and other donors in fostering a climate of nondiscrimination against people with disabilities. As part of this policy USAID has established standards for any new or renovation construction project funded by USAID to allow access by people with disabilities (PWDs). The full text of the policy paper can be found at the following Web site: pdf.usaid.gov/pdf_docs/PDABQ631.pdf.

b. USAID requires the recipient to comply with standards of accessibility for people with disabilities in all structures, buildings or facilities resulting from new or renovation construction or alterations of an existing structure.

c. The recipient will comply with the host country or regional standards for accessibility in construction when such standards result in at least substantially equivalent accessibility and usability as the standard provided in the Americans with Disabilities Act (ADA) of 1990 and the Architectural Barriers Act (ABA) Accessibility Guidelines of July 2004. Where there are no host country or regional standards for universal access or where the host country or regional standards fail to meet the ADA/ABA threshold, the standard prescribed in the ADA and the ABA will be used.

d. New Construction. All new construction will comply with the above standards for accessibility.

e. Alterations. Changes to an existing structure that affect, the usability of the structure will comply with the above standards for accessibility unless the recipient obtains the Agreement Officer's advance approval that compliance is technically infeasible or constitutes an undue burden or both. Compliance is technically infeasible where structural conditions would require removing or altering a load-bearing member that is an essential part of the structural frame or because other existing physical or site constraints prohibit modification or addition of elements, spaces, or features that are in full and strict compliance with the minimum requirements of the standard. Compliance is an undue burden where it entails either a significant difficulty or expense or both.

f. Exceptions. The following construction related activities are excepted from the requirements of paragraphs a. through d. above:

(1) Normal maintenance, reroofing, painting or wall papering, or changes to mechanical or electrical systems are not alterations and the above standards do not apply unless they affect the accessibility of the building or facility; and

(2) Emergency construction (which may entail the provision of plastic sheeting or tents, minor repair and upgrading of existing structures, rebuilding of part of existing structures, or provision of temporary structures) intended to be temporary in nature. A portion of emergency construction assistance may be provided to people with disabilities as part of the process of identifying disaster- and crisis-affected people as "most vulnerable."

[END OF PROVISION]

RAA22. CENTRAL CONTRACTOR REGISTRATION AND UNIVERSAL IDENTIFIER (OCTOBER 2010)

a. Requirement for Central Contractor Registration (CCR). Unless you are exempted from this requirement under 2 CFR 25.110, you as the recipient must maintain the currency of your information in the CCR until you submit the final financial report required under this award or receive the final payment, whichever is later. This requires that you review and update the information at least annually after the initial registration, and more frequently, if required by changes in your information or another award term.

b. Requirement for Data Universal Numbering System (DUNS) numbers. If you are authorized to make subawards under this award, you:

(1) Must notify potential subrecipients that no entity (see definition in paragraph c. of this award term) may receive a subaward from you unless the entity has provided its DUNS number to you.

(2) May not make a subaward to an entity unless the entity has provided its DUNS number to you.

c. Definitions. For purposes of this award term:

(1) Central Contractor Registration (CCR) means the Federal repository into which an entity must provide information required for the conduct of business as a recipient. Additional information about registration procedures may be found at the CCR Internet site (currently at **www.ccr.gov**).

(2) Data Universal Numbering System (DUNS) number means the nine-digit number established and assigned by Dun and Bradstreet, Inc. (D&B) to uniquely identify business entities. A DUNS number may be obtained from D&B by telephone (currently 866-705-5711) or the Internet (currently at **fedgov.dnb.com/webform**).

(3) Entity, as it is used in this award term, means all of the following, as defined at 2 CFR 25, subpart C:

(i) A governmental organization, which is a State, local government, or Indian tribe;
(ii) A foreign public entity;
(iii) A domestic or foreign nonprofit organization;
(iv) A domestic or foreign for-profit organization; and
(v) A Federal agency, but only as a subrecipient under an award or subaward to a non-Federal entity.

(4) Subaward:

(i) This term means a legal instrument to provide support for the performance of any portion of the substantive project or program for which you received this award and that you as the recipient award to an eligible subrecipient.
(ii) The term does not include your procurement of property and services needed to carry out the project or program (for further explanation, see Sec. —.210 of the attachment to OMB Circular A-133, “Audits of States, Local Governments, and Non-Profit Organizations”).
(iii) A subaward may be provided through any legal agreement, including an agreement that you consider a contract.

(5) Subrecipient means an entity that:

(i) Receives a subaward from you under this award; and
(ii) Is accountable to you for the use of the Federal funds provided by the subaward.

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

ADDENDUM (JUNE 2012):

a. Exceptions. The requirements of this provision to obtain a Data Universal Numbering System (DUNS) number and maintain a current registration in the Central Contractor Registration (CCR) do not apply, at the prime award or subaward level, to:

(1) Awards to individuals
(2) Awards less than $25,000 to foreign recipients to be performed outside the United States (based on a USAID determination)
(3) Awards where the Agreement Officer determines, in writing, that these requirements would cause personal safety concerns.

b. This provision does not need to be included in subawards.

[END OF PROVISION]

RAA23. REPORTING SUBAWARDS AND EXECUTIVE COMPENSATION (OCTOBER 2010)

a. Reporting of first-tier subawards.

(1) Applicability. Unless you are exempt as provided in paragraph d. of this award term, you must report each action that obligates $25,000 or more in Federal funds that does not include Recovery funds (as defined in section 1512(a)(2) of the American Recovery and Reinvestment Act of 2009, Pub. L. 111-5) for a subaward to an entity (see definitions in paragraph e. of this award term).

(2) Where and when to report.

(i) You must report each obligating action described in paragraph a.(1) of this award term to **www.fsrs.gov**.

(ii) For subaward information, report no later than the end of the month following the month in which the obligation was made. (For example, if the obligation was made on November 7, 2010, the obligation must be reported by no later than December 31, 2010.)

(3) What to report. You must report the information about each obligating action that the submission instructions posted at **www.fsrs.gov** specify.

b. Reporting Total Compensation of Recipient Executives.

(1) Applicability and what to report. You must report total compensation for each of your five most highly compensated executives for the preceding completed fiscal year, if —

(i) The total Federal funding authorized to date under this award is $25,000 or more;

(ii) In the preceding fiscal year, you received—

(A) 80 percent or more of your annual gross revenues from Federal procurement contracts (and

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

subcontracts) and Federal financial assistance subject to the Transparency Act, as defined at 2 CFR 170.320 (and subawards); and

(B) $25,000,000 or more in annual gross revenues from Federal procurement contracts (and subcontracts) and Federal financial assistance subject to the Transparency Act, as defined at 2 CFR 170.320 (and subawards); and

(iii) The public does not have access to information about the compensation of the executives through periodic reports filed under section 13(a) or 15(d) of the Securities Exchange Act of 1934 (15 U.S.C. 78m(a), 78o(d)) or section 6104 of the Internal Revenue Code of 1986. (To determine if the public has access to the

compensation information, see the U.S. Security and Exchange Commission total compensation filings at **www.sec.gov/answers/execomp.htm**.)

(2) Where and when to report. You must report executive total compensation described in paragraph b.(1) of this award term:

(i) As part of your registration profile at **www.bpn.gov/ccr**.

(ii) By the end of the month following the month in which this award is made, and annually thereafter.

c. Reporting of Total Compensation of Subrecipient Executives.

(1) Applicability and what to report. Unless you are exempt as provided in paragraph d. of this award term, for each first-tier subrecipient under this award, you must report the names and total compensation of each of the subrecipient's five most highly compensated executives for the subrecipient's preceding completed fiscal year, if—

(i) In the subrecipient's preceding fiscal year, the subrecipient received—

(A) 80 percent or more of its annual gross revenues from Federal procurement contracts (and subcontracts) and Federal financial assistance subject to the Transparency Act, as defined at 2 CFR 170.320 (and subawards); and

(B) $25,000,000 or more in annual gross revenues from Federal procurement contracts (and subcontracts), and Federal financial assistance subject to the Transparency Act (and subawards); and

(ii) The public does not have access to information about the compensation of the executives through periodic reports filed under section 13(a) or 15(d) of the Securities Exchange Act of 1934 (15 U.S.C. 78m(a), 78o(d)) or section 6104 of the Internal Revenue Code of 1986. (To determine if the public has access to the compensation information, see the U.S. Security and Exchange Commission total compensation filings at **www.sec.gov/answers/execomp.htm**.)

(2) Where and when to report. You must report subrecipient executive total compensation described in paragraph c.(1) of this award term:

(i) To the recipient.

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

(ii) By the end of the month following the month during which you make the subaward. For example, if a subaward is obligated on any date during the month of October of a given year (for example, between October 1 and 31), you must report any required compensation information of the subrecipient by November 30 of that year.

d. Exemptions.

If, in the previous tax year, you had gross income, from all sources, under $300,000, you are exempt from the requirements to report:

(1) Subawards, and

(2) The total compensation of the five most highly compensated executives of any subrecipient.

e. Definitions.

For purposes of this award term:

(1) Entity means all of the following, as defined in 2 CFR 25:

(i) A governmental organization, which is a State, local government, or Indian tribe;
(ii) A foreign public entity;
(iii) A domestic or foreign nonprofit organization;
(iv) A domestic or foreign for-profit organization; and
(v) A Federal agency, but only as a subrecipient under an award or subaward to a non-Federal entity.

(2) Executive means officers, managing partners, or any other employees in management positions.

(3) Subaward:

(i) This term means a legal instrument to provide support for the performance of any portion of the substantive project or program for which you received this award and that you as the recipient award to an eligible subrecipient.
(ii) The term does not include your procurement of property and services needed to carry out the project or program (for further explanation, see Sec. .210 of the attachment to OMB Circular A-133, "Audits of States, Local Governments, and Non- Profit Organizations").
(iii) A subaward may be provided through any legal agreement, including an agreement that you or a subrecipient considers a contract.

(4) Subrecipient means an entity that:

(i) Receives a subaward from you (the recipient) under this award; and
(ii) Is accountable to you for the use of the Federal funds provided by the subaward.

(5) Total compensation means the cash and noncash dollar value earned by the executive during the recipient's or subrecipient's preceding fiscal year and includes the following (for more information see 17 CFR 229.402(c)(2)):

(i) Salary and bonus.
(ii) Awards of stock, stock options, and stock appreciation rights. Use the dollar amount recognized for financial statement reporting purposes with respect to the fiscal year in accordance with the Statement of Financial Accounting Standards No. 123 (Revised 2004) (FAS 123R), Shared Based Payments.
(iii) Earnings for services under nonequity incentive plans. This does not include group life, health, hospitalization, or medical reimbursement plans that do not discriminate in favor of executives, and are available generally to all salaried employees.
(iv) Change in pension value. This is the change in present value of defined benefit and actuarial pension plans.
(v) Above-market earnings on deferred compensation which is not tax-qualified.
(vi) Other compensation, if the aggregate value of all such other compensation (for example, severance, termination payments, value of life insurance paid on behalf of the employee, perquisites or property) for the executive exceeds $10,000.

[END OF PROVISION]

RAA.24 PATENT REPORTING PROCEDURES (JULY 2012)

As incorporated by 22 CFR 226.36 and the standard provision "APPLICABILITY OF 22 CFR PART 226," the clause at 37 CFR 401.14 ("Patent Rights (Small Business Firms and Nonprofit Organizations)") is incorporated by reference into this award as if set forth in full text. The recipient must use the National Institutes of Health EDISON Patent Reporting and Tracking system (http://www.iedison.gov) to fulfill its disclosure obligations under 37 CFR 401.14(c)(1). The recipient must also submit reports on utilization of subject inventions annually to the Agreement Officer's Representative under 37 CFR 401.14(h), and the last report must be provided within 90 days of the expiration of the agreement.

[END OF PROVISION]

-END OF PROVISIONS-

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

ATTACHMENT D — BRANDING STRATEGY AND MARKING PLAN

"USAID BRANDING STRATEGY"

Development of Heat Tolerant Wheat for South Asia

AWARD NUMBER

DATE OF PLAN

1) Purpose

What is the intended purpose for the branding/marketing of the program.

To raise communicate to the scientific community and to raise awareness among seed companies and national programs of the opportunity to partner with us to disseminate the products of the research.

2) Positioning

What is the intended name of this program, project, or activity?

"Heat Tolerant Wheat for South Asia"

Will a program logo be developed and used consistently to identify this program? If yes, please attach a copy of the proposed program logo.

No, we will not use a program logo.

3) Program Communications and Publicity

Who are the primary and secondary audiences for this project or program?

The primary audiences as this stage are research institutions and seed companies. The secondary audiences are developing country governments and farmer organizations.

What communications or program materials will be used to explain or market the program to beneficiaries?

A summary of the project may appear on the websites of partners, we will issue a press release at the start of the project, we will likely present posters on the research at scientific conferences, and as the research reaches field efficacy, may host field visits from seed companies, NARS, and farmer organizations.

What is the main program message?

We are developing new technologies to sustain wheat yields in the face of rising temperatures due to climate change.

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

Will the recipient announce and promote publicly this program or project to host country citizens? If yes, what press and promotional activities are planned?

No.

Please provide any additional ideas about how to increase awareness that the American people support this project or program.

We will issue a joint press release and have in the past spoke at scientific and industry meetings in the U.S. to promote the value of the partnership with USAID.

4) Acknowledgements

Will there be any direct involvement from a host country government ministry? If yes, please indicate which one or ones. Will the recipient acknowledge the ministry as an additional co-sponsor?

The National Biodiversity and Plant Gene Resources is a government institute under the Ministry of Agriculture. They will be acknowledged as a partner, but not a co-sponsor. We have not specified co-funding or cost-sharing from the government.

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

GENERAL INSTRUCTIONS

USAID's policy requires non-U.S., non-governmental organizations, including cooperating country non-governmental organizations (and in rare cases, Public International Organizations) to follow marking requirements for assistance awards. Marking requirements, including requests for presumptive exceptions and waivers for assistance awards must be in accordance with 22 CFR 226.91.

With reference to ADS Sections 320.3.3.2 and 22 CFR 226.91 the Recipient shall prepare a Marking Plan containing information substantially similar to the sample provided below:

"USAID MARKING PLAN"
AWARD TITLE
AWARD NUMBER
DATE OF PLAN

(1) Requirement: A description of the public communications, commodities, and program materials that the recipient will produce as a part of the grant or cooperative agreement and which will visibly bear the USAID identity. These include: (i) program, project, or activity sites funded by USAID, including visible infrastructure projects or other programs, projects, or activities that are physical in nature; (ii) technical assistance, studies, reports, papers, publications, audiovisual productions, public service announcements, websites/Internet activities, and other promotional, informational, media, or communication products funded by USAID; (iii) events financed by USAID, such as training courses, conferences, seminars, exhibitions, fairs, workshops, press conferences, and other public activities; and (iv) all commodities or equipment provided under humanitarian assistance or disaster relief programs, and all other equipment, supplies and other materials funded by USAID, and their export packaging.

(2) Table of Supplies and Equipment to be used in a visible manner in the fulfillment of the goals of the project and an indication of how and where they will be tagged with the USAID identity.

Nothing to report here.

Supply/Equipment	Type of Marking	Where Marking Placed
Computers?	USAID Identifying vinyl label	On front of monitor
Printers?	USAID Identifying vinyl label	On top of printer
Field Backpacks?	USAID Identifying vinyl label	On outside of backpack

(3) Table of Deliverables expected to be produced in the conduct of this program: All deliverables will be marked in a visible manner with the USAID identity; below is an indication of what type of marking will be used and where on the deliverable the USAID identity will be placed.

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT

OF 1933, AS AMENDED.

Deliverable	Type of Marking	Where Marking Placed
Reports	**USAID printed identity**	**Front cover**
Publications (brochures)	**USAID printed identity**	**Front cover**
Website	**USAID web identity**	**Front page**

(4) Sub-recipient: As specified in the standard provisions, the marking requirements will "flow down" to sub-recipients or sub-awards, and will include the USAID-approved marking provision in all USAID funded sub-awards, as follows: "As a condition of receipt of this sub-award, marking with USAID identity of a size and prominence equivalent to or greater that the recipient's, sub-recipient's, other donor's or third party's is required."

(5)
We will communicate to CIMMYT and NBPGR that they must follow required branding and marking requirements.

(6) Any "public communications," as defined in 22 C.F.R. 226.2, funded by USAID, in which the content has been approved by USAID, will contain the following disclaimer:

"This study/report/audio-visual/other information/media product (specify) is made possible by the generous support of the American people through the United States Agency for International Development (USAID). The contents are the responsibility of [insert recipient's name] and do not necessarily reflect the views of USAID or the United States Government."

(6) As specified in the standard provisions, will provide the Agreement Officer's Representative (AOR) or other USAID personnel designated in the grant or cooperative agreement with two copies of all program and communications materials produced under the award. In addition, will submit one electronic or one hard copy of all final documents to USAID's Development Experience Clearinghouse.

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

MODIFICATION OF ASSISTANCE

1. MODIFICATION NUMBER	2. EFFECTIVE DATE OF MODIFICATION	3. AWARD NUMBER:	4. EFFECTIVE DATE OF AWARD :
03	See block 15	A1D-OAA-A-13-00001	10/12/2012

5. GRANTEE:

Arcadia Biosciences, Inc.
202 Cousteau Pl., Suite 200
Davis, CA 95618

DUNS NO 1359644760
TIN NO. : 81-0571538 **LOC NO.** : HHS-C4625P1

6. ADMINISTERED BY:

Acquisition and Assistance
Office of Acquisition and Assistance
M/OAA/BFS, Room 568A, SA-44
1300 Pennsylvania Ave, N.W.
Washington, D.C. 20523

7. FISCAL DATA: **Amount Obligated**: $828,876.00

8. TECHNICAL OFFICE: E&E/DGST:

GLAAS Requisition: REQM-BFS-14-000034

Budget Fiscal Year:

Operating Unit:
Strategic Objective:
Team/Division:
Benefiting Geo Area:
Object Class:

9. PAYMENT OFFICE:

U.S. Agency for International Development
Office of Financial Management
M/FM/CMP/DC - SA-44 Room 435K
1300 Pennsylvania Avenue, NW
Washington DC 20523

10. FUNDING SUMMARY:

	Obligated Amount	Total Est. Amt.
Amount Prior to this Modification:	$ 1,146,172.00	$ 3,829,228.00
Change Made by this Modification:	$ 828,876.00	$ 0.00
New/Current Total:	$ 1,975,048.00	$ 3,829,228.00

11. DESCRIPTION OF MODIFICATION

The purpose of this modification is to provide incremental funding in the amount of $828,876.00 to support the Heat Tolerant Wheat for South Asia program with Arcadia Biosciences. The total obligated amount has increased by $828,876.00 from $1,146,172.00 to $1,975,048.00.

ACCOUNTING DATA:

Accounting Template: BFS BRG Funds: BBFY: 2013; EBFY: 2014; Fund: DV-GFSI; OP: BFS/ARP: Prog Area: A18; Dist Code; BFS- APF; Prog Elem: A074; BGA: 997; SOC: 4100201.

ALL OTHER TERMS AND CONDITIONS REMAIN THE SAME.

12. THIS MODIFICATION IS ENTERED INTO PURSUANT TO THE AUTHORITY OF FAA Act of 1961, as amended AS AMENDED. EXCEPT AS SPECIFICALLY HEREIN AMENDED, ALL TERMS AND CONDITIONS OF THE GRANT REFERENCED IN BLOCK #3 ABOVE, AS IT MAY HAVE HERETOFORE BEEN AMENDED, REMAIN UNCHANGED AND IN FULL FORCE AND EFFECT.

13. GRANTEE o IS x IS NOT REQUIRED TO SIGN THIS DOCUMENT TO RECONFIRM ITS AGREEMENT WITH THE CHANGES EFFECTED HEREIN

14. GRANTEE:		**15. THE UNITED STATES OF AMERICA** **U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT**	
BY:	**/s/**	**BY:**	**/s/Charles Jackson**
			Charles Jackson
	(Name Typed or Printed)		**(Name Typed or Printed)**
TITLE:		**TITLE:**	**Agreement Officer**
DATE:		**DATE:**	**11/25/2013**

[…*…] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.

ARCADIA BIOSCIENCES, INC.
EXECUTIVE INCENTIVE BONUS PLAN
(Adopted by the Board of Directors on , 2015
and effective as of immediately prior to the effectiveness of the
Company's Registration Statement on , 2015)

1. PURPOSE

The purpose of the Arcadia Biosciences, Inc. Executive Incentive Bonus Plan (as amended from time to time, the "***Plan***") is to motivate and reward eligible employees for their contributions toward the achievement of certain Performance Goals (as defined below) by Arcadia Biosciences, Inc. (together with its subsidiaries, the "***Company***"). The Plan is designed with the intention that the incentives paid hereunder to certain executive officers of the Company are deductible under Section 162(m) of the Internal Revenue Code of 1986, as amended, and the regulations and interpretations promulgated thereunder (the "***Code***"). However, the Company cannot guarantee that awards under the Plan will qualify for exemption under Code Section 162(m) and circumstances may present themselves under which Awards under the Plan do not comply with Code Section 162(m) whether intended or not. The adoption of the Plan as to current and future covered employees (as determined under Code Section 162(m)) and executive officers (within the meaning of Rule 3b-7 of the Securities Exchange Act of 1934, as amended) is subject to the approval of the Company's shareholders.

2. DEFINITIONS

The following definitions shall be applicable throughout the Plan:

(a) "***Award***" means the amount of a cash incentive payable under the Plan to a Participant with respect to a Performance Period.

(b) "***Board***" means the Board of Directors of the Company, as constituted from time to time.

(c) "***Committee***" means the Compensation Committee of the Board or another Committee designated by the Board that, to the extent required to qualify any compensation paid hereunder as "performance-based" compensation within the meaning of Code Section 162(m), is comprised of two or more "outside directors" as defined in Code Section 162(m). The members of the Committee shall be appointed from time to time by, and serve at the pleasure of, the Board. Any member of the Committee may resign at any time by notice in writing mailed or

---

delivered to the Secretary of the Company. As of the Effective Date, the Plan shall be administered by the Compensation Committee of the Board.

(d) "***Effective Date***" means the day immediately prior to the date the Company becomes publicly held within the meaning of Treasury Regulation Section 1.162-27(c)(1).

(e) "***Participant***" means any officer or employee of the Company who is designated as a Participant by the Committee.

(f) "***Performance Goal***" means a formula or standard determined by the Committee with respect to each Performance Period based on one or more of the following criteria and any adjustment(s) thereto established by the Committee: (i) sales or non-sales revenue; (ii) return on revenues; (iii) operating income; (iv) income or earnings including operating income; (v) income or earnings before or after taxes, interest, depreciation and/or amortization; (vi) income or earnings from continuing operations; (vii) net income; (viii) pre-tax income or after-tax income; (ix) net income excluding amortization of intangible assets, depreciation and impairment of goodwill and intangible assets and/or excluding charges attributable to the adoption of new accounting pronouncements; (x) raising of financing or fundraising; (xi) project financing; (xii) revenue backlog; (xiii) gross margin; (xiv) operating margin or profit margin; (xv) capital expenditures, cost targets, reductions and savings and expense management; (xvi) return on assets (gross or net), return on investment, return on capital, or return on shareholder equity; (xvii) cash flow, free cash flow, cash flow return on investment (discounted or otherwise), net cash provided by operations, or cash flow in excess of cost of capital; (xviii) performance warranty and/or guarantee claims; (xix) stock price or total stockholder return; (xx) earnings or book value per share (basic or diluted); (xxi) economic value created; (xxii) pre-tax profit or after-tax profit; (xxiii) strategic business criteria, consisting of one or more objectives based on meeting specified market penetration or market share, completion of strategic agreements such as licenses, funded collaborations, joint ventures, acquisitions, and the like, geographic business expansion, objective customer satisfaction or information technology goals, intellectual property asset metrics; (xxiv) objective goals relating to divestitures, joint ventures, mergers, acquisitions and similar transactions; (xxv) objective goals relating to staff management, results from staff attitude and/or opinion surveys, staff satisfaction scores, staff safety, staff accident and/or injury rates, compliance, headcount, performance management, completion of critical staff training initiatives; (xxvi) objective goals relating to projects, including project completion, timing and/or achievement of milestones, project budget, technical progress against work plans; (xxvii) key regulatory objectives or milestones; and (xxviii) enterprise resource planning. Awards issued to Participants who are not subject to the limitations of Code Section 162(m) or Awards to Participants that are not intended to comply with the requirements of Code Section 162(m) may, in either case, take into account other factors (including subjective factors). Performance Goals may differ from Participant to Participant, Performance Period to Performance Period and from Award to Award. Any criteria used may be measured, as applicable, (i) in absolute terms, (ii) in relative terms (including, but not limited to, any increase (or decrease) over the passage of time and/or any measurement against other companies or financial or business or stock index metrics particular to the Company), (iii) on a per share and/or share per capita basis, (iv) against the performance of the Company as a whole or against any affiliate(s), or a particular segment(s), a business unit(s) or a product(s) of the Company or individual project company, (v) on a pre-tax

or after-tax basis, and/or (vi) using an actual foreign exchange rate or on a foreign exchange neutral basis.

(g) "***Performance Period***" means any period not exceeding thirty-six (36) months as determined by the Committee, in its sole discretion. The Committee may establish different Performance Periods for different Participants, and the Committee may establish concurrent or overlapping Performance Periods.

(h) "***Reliance Period***" means the reliance period under the applicable rule set forth in Treasury Regulation Section 1.162-27(f)(2).

3. ADMINISTRATION

The Plan shall be administered by the Committee, which shall have the discretionary authority to interpret the provisions of the Plan, including all decisions on eligibility to participate, the establishment of Performance Goals, the amount of Awards payable under the Plan, and the payment of Awards. The Committee shall also have the discretionary authority to establish rules under the Plan so long as such rules do not explicitly conflict with the terms of the Plan and any such rules shall constitute part of the Plan. The decisions of the Committee shall be final and binding on all parties making claims under the Plan. The Committee may delegate its administrative authority in whole or in part with respect to Awards issued to Participants who are not current or future covered employees or executive officers (each, as defined in Section 1).

4. ELIGIBILITY

Officers and key employees of the Company shall be eligible to participate in the Plan as determined at the sole discretion of the Committee.

5. AMOUNT OF AWARDS

With respect to each Participant, the Committee will establish one or more Performance Periods, an individual Participant incentive target for each Performance Period and the Performance Goal(s) to be met during such Performance Period(s).

The maximum amount of any Award that can be paid under the Plan to any Participant during any Performance Period is $[2,000,000]. The Committee reserves the right, in its sole discretion, to increase, reduce or eliminate the amount of an Award otherwise payable to a Participant with respect to any Performance Period. In addition, the amount of the aggregate value of any Awards payable under the Plan to covered employees (as defined in Section 1 above) in reliance upon the transition rule promulgated under Treasury Regulation Section 1.162-27(f) may not exceed (x) $[10,000,000] during each taxable year of the Company and (y) $[30,000,000] during the entire Reliance Period. No compensation may be provided under the Plan to covered employees (as defined in Section 1 above) in excess of the foregoing limitations.

6. PAYMENT OF AWARDS

(a) Unless otherwise determined by the Committee, a Participant must be actively employed (or on a qualified leave of absence) and in good standing with the Company on the date the Award is to be paid. The Committee may make exceptions to this requirement in the case of retirement, death or disability, an unqualified leave of absence or under other circumstances, as determined by the Committee in its sole discretion.

(b) Any distribution made under the Plan shall be made in cash and occur within a reasonable period of time after the end of the Performance Period in which the Participant has earned the Award. Notwithstanding the foregoing, in order to comply with the short-term deferral exception under Code Section 409A, if the Committee waives the requirement that a Participant must be employed on the date the Award is to be paid, payout shall occur no later than the 15th day of the third month following the later of (i) the end of the Company's taxable year in which such requirement is waived or (ii) the end of the calendar year in which such requirement is waived.

7. GENERAL

(a) TAX WITHHOLDING. The Company shall have the right to deduct from all Awards any federal, state or local income and/or payroll taxes required by law to be withheld with respect to such payments. The Company also may withhold from any other amount payable by the Company or any affiliate to the Participant an amount equal to the taxes required to be withheld from any Award.

(b) CLAIM TO AWARDS AND EMPLOYMENT RIGHTS. Nothing in the Plan shall confer on any Participant the right to continued employment with the Company or any of its affiliates, or affect in any way the right of the Company or any affiliate to terminate the Participant's employment at any time, and for any reason, or change the Participant's responsibilities. Awards represent unfunded and unsecured obligations of the Company and a holder of any right hereunder in respect of any Award shall have no rights other than those of a general unsecured creditor to the Company.

(c) BENEFICIARIES. To the extent the Committee permits beneficiary designations, any payment of Awards under the Plan to a deceased Participant shall be paid to the beneficiary duly designated by the Participant in accordance with the Company's practices. If no such beneficiary has been designated or survives the Participant, payment shall be made to the Participant's legal representative. A beneficiary designation may be changed or revoked by a Participant at any time, provided the change or revocation is filed with the Committee prior to the Participant's death.

(d) NONTRANSFERABILITY. A person's rights and interests under the Plan, including any Award previously made to such person or any amounts payable under the Plan, may not be sold, assigned, pledged, transferred or otherwise alienated or hypothecated except, in the event of a Participant's death, to a designated beneficiary as provided in the Plan, or in the absence of such designation, by will or the laws of descent and distribution.

(e) SUCCESSOR. All obligations of the Company under the Plan, with respect to Awards granted hereunder, shall be binding on any successor to the Company, whether the existence of such successor is the result of a direct or indirect purchase, merger, consolidation, or otherwise, of all or substantially all of the business or assets of the Company.

(f) INDEMNIFICATION. Each person who is or shall have been a member of the Committee and each employee of the Company or an affiliate who is delegated a duty under the Plan shall be indemnified and held harmless by the Company from and against any loss, cost, liability or expense that may be imposed upon or reasonably incurred by him or her in connection with or resulting from any claim, action, suit or proceeding to which he or she may be a party or in which he or she may be involved by reason of any action or failure to act under the Plan and against and from any and all amounts paid by him or her in satisfaction of judgment in any such action, suit or proceeding against him or her, provided such loss, cost, liability or expense is not attributable to such person's willful misconduct. Any person seeking indemnification under this provision shall give the Company prompt notice of any claim and shall give the Company an opportunity, at its own expense, to handle and defend the same before the person undertakes to handle and defend such claim on his or her own behalf. The foregoing right of indemnification shall not be exclusive of any other rights of indemnification to which such persons may be entitled, including under the Company's Articles of Incorporation or By-Laws, as a matter of law, or otherwise, or any power that the Company may have to indemnify them or hold them harmless.

(g) EXPENSES. The expenses of administering the Plan shall be borne by the Company.

(h) TITLES AND HEADINGS. The titles and headings of the sections in the Plan are for convenience of reference only, and in the event of any conflict, the text of the Plan, rather than such titles or headings, shall control.

(i) INTENT. The intention of the Company and the Committee is to administer the Plan in compliance with the transition rule promulgated under Treasury Regulation Section 1.162-27(f) that would permit payment of compensation to Participants who are or may become subject to Code Section 162(m), without regard to the limitations of Code Section 162(m) during the Reliance Period.

(j) GOVERNING LAW. The validity, construction, and effect of the Plan, any rules and regulations relating to the Plan, and any Award shall be determined in accordance with the laws of the State of Delaware (without giving effect to principles of conflicts of laws thereof) and applicable federal law. No Award made under the Plan shall be intended to be deferred compensation under Code Section 409A and will be interpreted accordingly.

(k) AMENDMENTS AND TERMINATION. The Committee may terminate the Plan at any time, provided such termination shall not affect the payment of any Awards accrued under the Plan prior to the date of the termination. The Committee may, at any time, or from time to time, amend or suspend and, if suspended, reinstate, the Plan in whole or in part; *provided, however*, that any amendment of the Plan shall be subject to the approval of the

Company's shareholders to the extent required to comply with the requirements of Code Section 162(m), or any other applicable laws, regulations or rules.

DIRECTOR COMPENSATION POLICY

Effective upon the closing of the initial public offering of Arcadia Biosciences, Inc., a Delaware corporation (the "***Company***"), directors of the Company that are not employees of the Company ("***Non-Employee Directors***") shall receive the following compensation for their service as a member of the Board of Directors (the "***Board***") of the Company:

Cash Compensation

Annual Retainer for Board Service

Each Non-Employee Director shall be entitled to an annual cash retainer of Forty Thousand Dollars (US$40,000) (the "***Annual Retainer***"), payable quarterly in arrears, subject to such director's continued service to the Company as a Non-Employee Director on the last day of the preceding quarter. Such amounts shall be prorated in the case of service for less than the entire quarter.

Annual Retainer for Chairman of the Board

In addition to the Annual Retainer, the Non-Employee Director serving as the Chairman of the Board shall receive an additional annual cash retainer of Twenty Thousand Dollars (US$20,000) (the "***Chairman Annual Retainer***"), payable quarterly in arrears, subject to such director's continued service to the Company as the Chairman of the Board on the last day of the preceding quarter. Such amounts shall be prorated in the case of service for less than the entire quarter.

Annual Retainer for Board Committee Chairpersons

In addition to the Annual Retainer, a Non-Employee Director who serves as Chair of the Company's Audit Committee, Compensation Committee or Nominating and Governance Committee shall be entitled to an additional annual cash retainer equal to Fifteen Thousand Dollars (US$15,000) (in the case of the Chair of the Audit Committee), Ten Thousand Dollars (US$10,000) (in the case of the Chair of the Compensation Committee), and/or Seven Thousand Five Hundred Dollars (US$7,500) (in the case of the Chair of the Nominating and Governance Committee), irrespective of the number of committees on which such director serves as Chair or as a member (collectively the "***Chair Retainers***"). Chair Retainers shall be payable quarterly in arrears, subject to such director's continued service to the Company as a Chair of a committee on the last day of the preceding quarter. Such amounts shall be prorated in the case of service for less than the entire quarter.

Annual Retainer for Service on a Board Committee

In addition to the Annual Retainer, other than the Chair, each Non-Employee Director who serves as member of the Company's Audit Committee, Compensation Committee or Nominating and Governance Committee shall be entitled to an additional annual cash retainer equal to Seven Thousand Five Hundred Dollars (US$7,500) (in the case of a member of the Audit Committee), Five Thousand Dollars (US$5,000) (in the case of a member of the Compensation Committee), and/or Three Thousand Seven Hundred Fifty Dollars (US$3,750) (in the case of a member of the Nominating and Governance Committee), irrespective of the number of committees on which such director serves as Chair or as a member (collectively the "***Committee Membership Retainers***"). Committee Membership Retainers shall be payable quarterly in arrears, subject to such director's continued service to the Company as a member of a committee on the last day of the preceding quarter. Such amounts shall be prorated in the case of service for less than the entire quarter.

Equity Award

Initial Award for New Directors

On the date a new Non-Employee Director becomes a member of the Board, each such Non-Employee Director shall automatically receive an option (an "***Initial Option***") to purchase 60,000 shares of the common stock of the Company (each, a "***Share***"). The per share exercise price for the Initial Option shall be equal to the fair market value for a Share on the date of grant. The Initial Option shall vest and becomes exercisable in three equal annual installments, with one-third of the Shares subject to the Initial Option vesting on each of the first three anniversaries of the date of grant, subject to such director's continued board service through each applicable vesting date. An employee director who ceases to be an employee, but who remains a director, will not receive the Initial Equity Awards. For the avoidance of doubt, no Initial Options will be granted to existing members of the Board in connection with the closing of the initial public offering of the Company.

Annual Award for Continuing Board Members

At each Company's annual meeting of stockholders, all Non-Employee Directors shall automatically receive an option (an "***Annual Option***") to purchase 20,000 Shares. The per share exercise price for the Annual Option shall be equal to the fair market value for a Share on the date of grant. The Annual Option shall vest and becomes exercisable on the earlier of (x) the one year anniversary of the date of grant of the Annual Option and (y) the date of the Company's next annual meeting of stockholders following the date of grant, subject to such director's continued board service through such vesting date.

Provisions Applicable to All Equity Awards

Each Initial Option and Annual Option shall be subject to the terms and conditions of the Company's 2015 Omnibus Equity Incentive Plan (the "***2015 Equity Plan***") and the terms of the Stock Option Agreement entered into by the Company and such director in connection with such award. For purposes of this Director Compensation Policy, "***fair market value***" shall have the meaning as set forth in the 2015 Equity Plan. Furthermore, all vesting for any such equity

awards to Non-Employee Directors shall terminate, and all such equity awards shall be fully vested, upon a "***Change in Control***" as defined in the 2015 Equity Plan.

Expense Reimbursement

The Company shall reimburse each director, consistent with the Company's travel and expense reimbursement policies and practices, for all reasonable out-of-pocket expenses incurred by any director of the Company directly in connection with travel to and from any meetings of the Board or committees thereof. The Company shall make expense reimbursements to all directors within a reasonable amount of time following submission by the director of reasonable written substantiation for the expenses.

Effective Date: _____

Exhibit 21.1

List of Subsidiaries

The names of Arcadia Biosciences, Inc.’s subsidiaries are omitted. Such subsidiaries do not, considered in the aggregate as a single subsidiary, constitute a significant subsidiary within the meaning of Item 601(b)(21)(ii) of Regulation S-K.

Exhibit 23.1

Consent of Independent Registered Public Accounting Firm

We consent to the use in this Registration Statement on Form S-1 of our report dated November 12, 2014 relating to the consolidated financial statements of Arcadia Biosciences, Inc., appearing in the Prospectus, which is part of this Registration Statement. We also consent to the reference to us under the heading "Experts" in such prospectus.

/s/ Deloitte & Touche LLP

Phoenix, Arizona
February 17, 2015

Exhibit 99.1

CONSENT OF PHILLIPS MCDOUGALL

We hereby consent to the use of our name in the Registration Statement on Form S-1 of Arcadia Biosciences, Inc. for the registration of its common stock, and any related preliminary prospectuses and prospectuses and any further amendments or supplements thereto (collectively, the "Registration Statement") and to the references to us and our reports concerning commercial trait values appearing in the Registration Statement.

Date: 11 February, 2015

Phillips McDougall

By: /s/ Dr. John McDougall
Name: Dr. John McDougall
Title: Director