UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, DC 20549

FORM 10-Q

(Mark One)

☒ **QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the quarterly period ended September 30, 2022

OR

☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the transition period from __________ to

Commission File Number: 001-37383

Arcadia Biosciences, Inc.
(Exact Name of Registrant as Specified in its Charter)

Delaware (State or other jurisdiction of incorporation or organization)	**81-0571538** (I.R.S. Employer Identification No.)
202 Cousteau Place, Suite 105 **Davis, CA** (Address of Principal Executive Offices)	**95618** (Zip Code)

Registrant's telephone number, including area code: (530) 756-7077

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common	RKDA	NASDAQ CAPITAL MARKET

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☒ No ☐

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§ 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes ☒ No ☐

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

Large accelerated filer	☐	Accelerated filer	☐
Non-accelerated filer	☒	Smaller reporting company	☒
Emerging growth company	☐		

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes ☐ No ☒

As of November 7, 2022, the registrant had 24,642,960 shares of common stock outstanding, $0.001 par value per share.

Arcadia Biosciences, Inc.

FORM 10-Q FOR THE QUARTER ENDED September 30, 2022

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ITEM 1. CONDENSED CONSOLIDATED FINANCIAL STATEMENTS

Arcadia Biosciences, Inc.

Condensed Consolidated Balance Sheets

(Unaudited)

(In thousands, except share data)

	September 30, 2022	December 31, 2021
Assets		
Current assets:		
Cash and cash equivalents	$ 22,719	$ 28,685
Accounts receivable and other receivables, net of allowance for doubtful accounts of $13 and $76 as of September 30, 2022 and December 31, 2021, respectively	2,726	1,370
Inventories, net — current	3,342	4,433
Assets held for sale	254	—
Prepaid expenses and other current assets	990	900
Total current assets	30,031	35,388
Property and equipment, net	848	2,291
Right of use asset	2,073	3,081
Inventories, net — noncurrent	984	2,494
Intangible assets, net	373	484
Other noncurrent assets	165	180
Total assets	$ 34,474	$ 43,918
Liabilities and stockholders' equity		
Current liabilities:		
Accounts payable and accrued expenses	$ 2,748	$ 3,638
Amounts due to related parties	47	64
Operating lease liability — current	986	1,074
Other current liabilities	270	264
Total current liabilities	4,051	5,040
Operating lease liability — noncurrent	1,269	2,220
Common stock warrant and option liabilities	2,135	3,392
Other noncurrent liabilities	2,000	2,070
Total liabilities	9,455	12,722
Commitments and contingencies (Note 15)		
Stockholders' equity:		
Common stock, $0.001 par value—150,000,000 shares authorized as of September 30, 2022 and December 31, 2021; 24,642,960 and 22,184,235 shares issued and outstanding as of September 30, 2022 and December 31, 2021, respectively	65	63
Additional paid-in capital	278,618	257,515
Accumulated deficit	(253,615)	(226,485)
Total stockholders' equity	25,068	31,093
Non-controlling interest	(49)	103
Total stockholders' equity	25,019	31,196
Total liabilities and stockholders' equity	$ 34,474	$ 43,918

See accompanying notes to the unaudited condensed consolidated financial statements.

Arcadia Biosciences, Inc.

Condensed Consolidated Statements of Operations and Comprehensive Loss

(Unaudited)

(In thousands, except share and per share data)

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2022	2021	2022	2021
Revenues:				
Product	$ 1,851	$ 2,324	$ 7,967	$ 4,506
Royalty	17	35	117	86
License	10	17	872	17
Total revenues	1,878	2,376	8,956	4,609
Operating expenses (income):				
Cost of revenues	1,344	2,511	8,250	4,954
Research and development	255	1,038	1,009	3,328
Gain on sale of Verdeca	—	—	(1,138)	—
Impairment of intangible assets	—	120	72	120
Change in fair value of contingent consideration	—	—	(70)	(140)
Impairment of property and equipment	24	1,108	370	1,319
(Gain) loss on sale of property and equipment	—	—	(386)	17
Selling, general and administrative	4,835	6,312	13,834	16,733
Total operating expenses	6,458	11,089	21,941	26,331
Loss from operations	(4,580)	(8,713)	(12,985)	(21,722)
Interest income (expense)	95	(15)	123	(23)
Other income (expense), net	43	(7)	13	10,214
Change in fair value of common stock warrant and option liabilities	1,880	4,777	1,880	4,601
Gain on extinguishment of PPP loan	—	1,123	—	1,123
Issuance and offering costs	(314)	—	(314)	(769)
Net loss before income taxes	(2,876)	(2,835)	(11,283)	(6,576)
Income tax provision	(1)	(1)	(1)	(1)
Net loss	(2,877)	(2,836)	(11,284)	(6,577)
Net loss attributable to non-controlling interest	(10)	(661)	(152)	(1,199)
Net loss attributable to common stockholders	$ (2,867)	$ (2,175)	$ (11,132)	$ (5,378)
Net loss per share attributable to common stockholders:				
Basic and diluted	$ (0.12)	$ (0.10)	$ (0.48)	$ (0.26)
Weighted-average number of shares used in per share calculations:				
Basic and diluted	24,552,543	22,177,423	22,984,816	20,976,105
Other comprehensive loss, net of tax				
Foreign currency translation adjustment	—	(12)	—	(24)
Other comprehensive loss	—	(12)	—	(24)
Comprehensive loss attributable to common stockholders	$ (2,867)	$ (2,187)	$ (11,132)	$ (5,402)

See accompanying notes to the unaudited condensed consolidated financial statements.

Arcadia Biosciences, Inc.

Condensed Consolidated Statements of Stockholders' Equity

(Unaudited)

(In thousands, except share data)

	Common Stock		Additional Paid-In Capital	Accumulated Deficit	Non-Controlling Interest	Total Stockholders' Equity
	Shares	Amount				
Balance at December 31, 2021	22,184,235	$ 63	$ 257,515	$ (226,485)	$ 103	$ 31,196
Reclassification upon adoption of ASU 2020-06	—	—	19,390	(15,998)	—	3,392
Issuance of shares related to employee stock purchase plan	4,683	—	4	—	—	4
Stock-based compensation	—	—	260	—	—	260
Net loss	—	—	—	(4,488)	(122)	(4,610)
Balance at March 31, 2022	22,188,918	$ 63	$ 277,169	$ (246,971)	$ (19)	$ 30,242
Stock-based compensation	—	—	323	—	—	323
Net loss	—	—	—	(3,777)	(20)	(3,797)
Balance at June 30, 2022	22,188,918	$ 63	$ 277,492	$ (250,748)	$ (39)	$ 26,768
Issuance of shares related to August 2022 Offering	2,450,000	2	1,174	—	—	1,176
Offering costs related to August 2022 Offering	—	—	(365)	—	—	(365)
Issuance of shares related to employee stock purchase plan	4,042	—	3	—	—	3
Stock-based compensation	—	—	314	—	—	314
Net loss	—	—	—	(2,867)	(10)	(2,877)
Balance at September 30, 2022	24,642,960	$ 65	$ 278,618	$ (253,615)	$ (49)	$ 25,019

	Common Stock		Additional Paid-In Capital	Accumulated Deficit	Accumulated Other Comprehensive Loss	Non-Controlling Interest	Total Stockholders' Equity
	Shares	Amount					
Balance at December 31, 2020	13,450,861	$ 54	$ 239,496	$ (211,825)	$ —	$ 827	$ 28,552
Issuance of shares related to the January 2021 PIPE	7,876,784	8	15,508	—	—	—	15,516
Offering costs related to the January 2021 PIPE	—	—	(2,084)	—	—	—	(2,084)
Issuance of placement agent warrants related to issuance of January 2021 PIPE	—	—	942	—	—	—	942
Issuance of shares related to employee stock purchase plan	8,604	—	21	—	—	—	21
Non-controlling interest capital contribution	—	—	—	—	—	750	750
Stock-based compensation	—	—	325	—	—	—	325
Net income (loss)	—	—	—	2,058	—	(377)	1,681
Balance at March 31, 2021	21,336,249	$ 62	$ 254,208	$ (209,767)	$ —	$ 1,200	$ 45,703
Issuance of shares at closing of Arcadia Wellness acquisition	827,401	1	2,052	—	—	—	2,053
Foreign currency translation adjustment	—	—	—	—	(12)	—	(12)
Stock-based compensation	—	—	356	—	—	—	356
Net loss	—	—	—	(5,261)	—	(161)	(5,422)
Balance at June 30, 2021	22,163,650	$ 63	$ 256,616	$ (215,028)	$ (12)	$ 1,039	$ 42,678
Issuance of shares related to employee stock purchase plan	6,585	—	17	—	—	—	17
Foreign currency translation adjustment	—	—	—	—	(12)	—	(12)
Stock-based compensation	—	—	354	—	—	—	354
Issuance of shares related to exercise of Service and Performance Warrants	14,000	—	22	—	—	—	22
Net loss	—	—	—	(2,175)	—	(661)	(2,836)
Balance at September 30, 2021	22,184,235	$ 63	$ 257,009	$ (217,203)	$ (24)	$ 378	$ 40,223

See accompanying notes to the unaudited condensed consolidated financial statements.

Arcadia Biosciences, Inc.

Condensed Consolidated Statements of Cash Flows

(Unaudited)

(In thousands)

	Nine Months Ended September 30,	
	2022	2021
CASH FLOWS FROM OPERATING ACTIVITIES:		
Net loss	$ (11,284)	$ (6,577)
Adjustments to reconcile net loss to cash used in operating activities:		
Change in fair value of common stock warrant and option liabilities	(1,880)	(4,601)
Change in fair value of contingent consideration	(70)	(140)
Issuance and offering costs	314	769
Depreciation	354	737
Amortization of intangible assets	39	99
Lease amortization	686	914
Impairment of intangible assets	72	120
(Gain) loss on disposal of property and equipment	(386)	17
Stock-based compensation	897	1,035
Bad debt expense	32	—
Realized gain on corporate securities	—	(10,222)
Impairment of property and equipment	370	1,319
Write-down of inventories	1,530	1,802
Gain on extinguishment of PPP loan	—	(1,123)
Gain on sale of Verdeca	(1,138)	—
Changes in operating assets and liabilities:		
Accounts receivable and other receivables	(534)	(47)
Inventories	1,071	(2,651)
Prepaid expenses and other current assets	(90)	(452)
Other noncurrent assets	15	(159)
Accounts payable and accrued expenses	(890)	972
Amounts due to related parties	(17)	(29)
Unearned revenue	—	(8)
Other current liabilities	6	1
Operating lease liabilities	(718)	(984)
Net cash used in operating activities	(11,621)	(19,208)
CASH FLOWS FROM INVESTING ACTIVITIES:		
Proceeds from sale of property and equipment	897	2
Proceeds from sale of Verdeca — earn-out received	285	—
Purchases of property and equipment	(46)	(919)
Acquisitions, net of cash acquired	—	(4,250)
Proceeds from sales and maturities of investments	—	21,845
Net cash provided by (used in) investing activities	1,136	16,678
CASH FLOWS FROM FINANCING ACTIVITIES:		
Proceeds from issuance of common stock, pre-funded warrants and preferred investment options from August 2022 Offering	5,000	—
Payments of offering costs relating to August 2022 Offering	(488)	—
Proceeds from issuance of common stock and warrants from January 2021 PIPE securities purchase agreement	—	25,147
Payments of offering costs relating to January 2021 PIPE securities purchase agreement	—	(1,912)
Proceeds from the exercise of warrants	—	22
Principal payments on debt	—	(2,032)
Proceeds from ESPP purchases	7	39
Capital contributions received from non-controlling interest	—	750
Net cash provided by financing activities	4,519	22,014
Effects of foreign currency translation on cash and cash equivalents	—	(1)
Net (decrease) increase in cash and cash equivalents	(5,966)	19,483
Cash and cash equivalents — beginning of period	28,685	16,043
Cash and cash equivalents — end of period	$ 22,719	$ 35,526
SUPPLEMENTAL DISCLOSURES OF CASH FLOW INFORMATION:		
Cash paid for income taxes	$ —	$ 1
Cash paid for interest	$ 1	$ 25
NONCASH INVESTING AND FINANCING ACTIVITIES:		
Shares of common stock issued at closing of Arcadia Wellness transaction	$ —	$ 2,053
Common stock warrant liabilities reclassified to equity upon adoption of ASU 2020-06	$ 3,392	$ —
Common stock options issued to placement agent and included in offering costs related to August 2022 RDO securities purchase agreement	$ 191	$ —
Common stock warrants issued to placement agent and included in offering costs related to January 2021 PIPE securities purchase agreement	$ —	$ 942
Right of use assets obtained in exchange for new operating lease liabilities	$ 114	$ 1,662
Proceeds from sale of Verdeca in accounts receivable and other receivables	$ 854	$ —

See accompanying notes to the unaudited condensed consolidated financial statements.

Arcadia Biosciences, Inc.

Notes to Condensed Consolidated Financial Statements

(Unaudited)

1. Description of Business and Basis of Presentation

Organization

Arcadia Biosciences, Inc. (the "Company," "Arcadia" or "management"), was incorporated in Arizona in 2002 and maintains its headquarters in Davis, California, with additional office space in Dallas, TX, and additional facilities in American Falls, Idaho. The Company was reincorporated in Delaware in March 2015.

The Company is a producer and marketer of innovative, plant-based health and wellness products. Its history as a leader in science-based approaches to developing high-value crop improvements, as well as nutritionally enhanced food ingredients and health and wellness products, has laid the foundation for its path forward. The Company used advanced breeding techniques to develop these proprietary innovations which are now being commercialized through the sales of seed and grain, as well as food ingredients and products. The acquisition of the businesses of Lief Holdings, LLC (“Lief”), EKO Holdings, LLC (“Eko”) and Live Zola, LLC (“Zola”) added bath and body care products, as well as coconut water, to the Company’s portfolio.

In May 2021, the Company’s wholly owned subsidiary Arcadia Wellness, LLC (“Arcadia Wellness” or “AW”, see Note 6), acquired the businesses of Eko, Lief, and Zola. The acquisition included consumer CBD brands like Soul Spring™, a CBD-infused botanical therapy brand in the natural category, Saavy Naturals™, a line of natural body care products and ProVault™, a CBD-infused sports performance formula made with natural ingredients, providing effective support and recovery for athletes. Also included in the purchase is Zola, a coconut water sourced exclusively with sustainably grown coconuts from Thailand. On July 8, 2022, the Company entered into an agreement to license Saavy Naturals™ to Radiance Beauty and Wellness, Inc. ("Radiance Beauty"). See Note 6 for a discussion of the licensing agreement.

In August 2019, the Company entered into a joint venture agreement with Legacy Ventures Hawaii, LLC (“Legacy,” see Note 8) to grow, extract, and sell hemp products. The partnership Archipelago Ventures Hawaii, LLC (“Archipelago”), combines the Company’s extensive genetic expertise and resources with Legacy’s experience in hemp extraction and sales. In October 2021, Arcadia and Legacy mutually agreed to wind down the cultivation activities of Archipelago, due to regulatory challenges and a saturated hemp market.

In February 2012, the Company formed Verdeca, which was equally owned with Bioceres. Verdeca was formed to develop and deregulate soybean varieties using both partners’ agricultural technologies. In November 2020, Arcadia sold its membership interest in Verdeca to Bioceres in a transaction in which Arcadia received cash, shares of Bioceres stock and a royalty stream of up to $10.0 million on sales of Haab 4 soybeans (“HB4”) soybean. An additional $2.0 million in cash is to be paid upon achievement by Verdeca of reaching commercial plantings of at least 200,000 hectares of HB4 or China approving the HB4 soybean trait for “food and feed”. During the second quarter of 2022, Bioceres received China's approval of the HB4 soybean trait and as a result, Arcadia recorded license revenue of $862,000 and a gain on sale of Verdeca of $1.1 million on the condensed consolidated statements of operations and comprehensive loss. As of September 30, 2022, the Company received payment of $500,000 with the remaining $1.5 million in accounts receivable and other receivables, which the Company anticipates to receive over the next six months pursuant to the agreement.

Basis of Presentation and Principles of Consolidation

The accompanying unaudited condensed consolidated financial statements have been prepared in accordance with accounting principles generally accepted in the United States (“GAAP”) for interim financial statements and are in the form prescribed by the Securities and Exchange Commission (the “SEC”) in instructions to Form 10-Q and Rule 10-01 of Regulation S-X. In the opinion of management, the accompanying condensed consolidated financial statements reflect all adjustments, consisting of normal recurring adjustments, considered necessary for a fair statement of the Company’s financial position, results of operations and cash flows for the periods indicated. All material intercompany accounts and transactions have been eliminated in consolidation. The accompanying unaudited condensed consolidated financial statements include the accounts of the Company, Arcadia Wellness, and Archipelago.

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 Archipelago, a joint venture, as it has a controlling interest in Archipelago. Accordingly, the Company consolidates Archipelago in the condensed consolidated financial statements after eliminating intercompany transactions. For consolidated joint ventures, the non-controlling partner's share of the assets, liabilities and operations of the joint venture is included in non-controlling interests as equity of the Company. The non-controlling partner's interest is generally computed as the joint venture partner's ownership percentage of Archipelago. Net loss attributable to non-controlling interest of $10,000 and $152,000 is recorded as an adjustment to net loss to arrive at net loss attributable to common stockholders for the three and nine months ended September 30, 2022, respectively. Net loss attributable to non-controlling interest for the three and nine months ended September 30, 2021 was $661,000 and $1.2 million, respectively. The non-controlling partner's equity interests are presented as non-controlling interests on the condensed consolidated balance sheets.

The information included in these condensed consolidated financial statements and notes thereto should be read in conjunction with Management's Discussion and Analysis of Financial Condition and Results of Operations included herein and Management's Discussion and Analysis of Financial Condition and Results of Operations and the condensed consolidated financial statements and notes thereto for the fiscal year ended December 31, 2021 included in the Company's Annual Report on Form 10-K, filed with the SEC on March 31, 2022.

Liquidity, Capital Resources, and Going Concern

The accompanying condensed consolidated financial statements have been prepared on a going concern basis, which contemplates the realization of assets and the satisfaction of liabilities during the normal course of business. Since inception, the Company has financed its operations primarily through equity and debt financings. As of September 30, 2022, the Company had an accumulated deficit of $253.6 million, and cash and cash equivalents of $22.7 million. For the nine months ended September 30, 2022, the Company had a net loss of $11.3 million and net cash used in operations of $11.6 million. For the twelve months ended December 31, 2021, the Company had net losses of $16.1 million and net cash used in operations of $25.9 million.

With cash and cash equivalents of $22.7 million as of September 30, 2022, the Company believes that its existing cash and cash equivalents will not be sufficient to meet its anticipated cash requirements for at least the next 12 months from the issuance date of these financial statements, and thus raises substantial doubt about the Company's ability to continue as a going concern. The financial statements do not include any adjustments that might result from the outcome of this uncertainty.

The Company may seek to raise additional funds through debt or equity financings. The Company may also consider entering into additional partner arrangements. The sale of additional equity would result in dilution to the Company's stockholders. The incurrence of debt would result in debt service obligations, and the instruments governing such debt could provide for additional operating and financing covenants that would restrict operations. If the Company does require additional funds and is unable to secure adequate additional funding at terms agreeable to the Company, the Company may be forced to reduce spending, extend payment terms with suppliers, liquidate assets, or suspend or curtail planned development programs. Any of these actions could materially harm the business, results of operations and financial condition.

2. Recent Accounting Pronouncements

In June 2016, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update ("ASU") No. 2016-13, *Financial Instruments – Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments*. Additionally, the FASB issued ASU No. 2019-04, *Codification Improvements to Topic 326* in April 2019 and ASU 2019-05, *Financial Instruments — Credit Losses (Topic 326) — Targeted Transition Relief* in May 2019. The amendments affect loans, debt securities, trade receivables, net investments in leases, off-balance-sheet credit exposures, reinsurance receivables, and any other financial assets not excluded from the scope that have the contractual right to receive cash. In November 2019, the FASB issued ASU No. 2019-10, which defers the effective date of ASU No. 2016-13 for smaller reporting companies to fiscal years beginning after December 15, 2022, including interim periods within those fiscal years. The Company is currently evaluating the impact of the adoption of ASU No. 2016-13 on the condensed consolidated financial statements.

In August 2020, the FASB issued ASU No. 2020-06, *Debt—Debt with Conversion and Other Options (Subtopic 470-20) and Derivatives and Hedging—Contracts in Entity's Own Equity (Subtopic 815-40)*. The FASB Board is issuing this Update to address issues identified as a result of the complexity associated with applying GAAP for certain financial instruments with characteristics of liabilities and equity. In addressing the complexity, the FASB Board focused on amending the guidance on convertible instruments and the guidance on the derivatives scope exception for contracts in an entity's own equity. ASU 2020-06 is effective for public business entities that meet the definition of a Securities and Exchange Commission (SEC) filer, excluding entities eligible to be smaller reporting companies as defined by the SEC, for fiscal years beginning after December 15, 2021, including interim periods within those fiscal years. The amendments in this Update are effective for public business entities that meet the definition of a smaller reporting company, as defined by the SEC, for fiscal years beginning after December 15, 2023, including interim periods within those fiscal years. The Company early adopted ASU No. 2020-06 on January 1, 2022, using the modified retrospective method. Prior to the adoption of ASU No. 2020-06, the Company had liability classified awards due to the existence of certain contingent cash payment feature. Upon adoption, these clauses no longer preclude equity classification. Under the modified retrospective method, the historical mark-to-market adjustments related to outstanding awards were reversed through retained earnings and the original carrying value of the awards were reclassified to additional paid-in capital. Adoption of the new standard resulted in an increase to accumulated deficit of $16.0 million, an increase to additional paid-in capital of $19.4 million, and a decrease to common stock warrant liabilities of $3.4 million, on the condensed consolidated balance sheets.

In May 2021, the FASB issued ASU No. 2021-04, *Earnings Per Share (Topic 260), Debt—Modifications and Extinguishments (Subtopic 470-50), Compensation—Stock Compensation (Topic 718), and Derivatives and Hedging—Contracts in Entity's Own Equity (Subtopic 815-40): Issuer's Accounting for Certain Modifications or Exchanges of Freestanding Equity-Classified Written Call Options*. The amendments in this Update clarify and reduce diversity in an issuer's accounting for modifications or exchanges of freestanding equity-classified written call options (for example, warrants) that remain equity classified after modification or exchange. The amendments in this Update affect all entities that issue freestanding written call options that are classified in equity. The amendments in this Update are effective for all entities for fiscal years beginning after December 15, 2021, including interim periods within those fiscal years. The Company adopted ASU No. 2021-04 on January 1, 2022 with an immaterial impact on the Company's disclosures.

3. Inventory

Inventory costs are tracked on a lot-identified basis and are included as cost of revenues when sold. Inventories are stated at the lower of cost or net realizable value. The Company makes adjustments to inventory when conditions indicate that the net realizable value may be less than cost due to physical deterioration, obsolescence, changes in price levels, or other factors. Additional adjustments to inventory are made for excess and slow-moving inventory on hand that is not expected to be sold within a reasonable timeframe to reduce the carrying amount to its estimated net realizable value. The write-downs to inventory are included in cost of revenues and are based upon estimates about future demand from the Company's customers and distributors and market conditions. The Company recorded write-downs of CBD oil of $15,000 during the three months ended September 30, 2022 and of wheat, hemp seed, CBD oil and body care inventories of $1.5 million during the nine months ended September 30, 2022. Of inventories write-downs during the nine months ended September 30, 2022, $394,000 is related to the Radiance Beauty licensing agreement discussed in Note 6. The Company recorded write-downs of wheat and hemp seed inventories of $818,000 and $1.8 million during the three and nine months ended September 30, 2021, respectively. If there are significant changes in demand and market conditions, substantial future write-downs of inventory may be required, which would materially increase the Company's expenses in the period the write down is taken and materially affect the Company's operating results.

Inventories, net consist of the following (in thousands):

	September 30, 2022	December 31, 2021
Raw materials	$ 1,119	$ 1,851
Goods in process	92	842
Finished goods	3,115	4,234
Inventories	$ 4,326	$ 6,927

4. Property and Equipment, Net

Property and equipment, net consisted of the following (in thousands):

	September 30, 2022	December 31, 2021
Laboratory equipment	$ 1,688	$ 2,659
Software and computer equipment	559	548
Machinery and equipment	653	1,809
Furniture and fixtures	108	211
Vehicles	333	417
Leasehold improvements	2,203	2,306
Property and equipment, gross	5,544	7,950
Less: accumulated depreciation and amortization	(4,696)	(5,659)
Property and equipment, net	$ 848	$ 2,291

Depreciation expense was $354,000 and $737,000 for the nine months ended September 30, 2022 and 2021, respectively.

As of September 30, 2022, and December 31, 2021, respectively, there was $10,000 and $267,000 of construction in progress included in property and equipment that had not been placed into service and was not subject to depreciation.

Property and equipment are considered assets held for sale when management approves and commits to a plan to dispose of a property or group of properties. The property and equipment held for sale prior to the sale date is separately presented, within current assets, on the condensed consolidated balance sheet as assets held for sale.

During the three and nine months ended September 30, 2022, management initiated the sale of property and equipment related to the Davis laboratory and Archipelago. The Company completed the sale of such property and equipment with a gain on sale of property and equipment in the amount of $0 and $386,000 recorded on the condensed consolidated statements of operations and comprehensive loss during the three and nine months ended September 30, 2022, respectively. The proceeds related to the sale of property and equipment during the three and nine months ended September 30, 2022 are $5,000 and $897,000, respectively. The Company had no sales of assets held for sale during the three and nine months ended September 30, 2021. Property and equipment related to Archipelago, in the amount of $254,000, have been classified as assets held for sale, and are recorded at fair value as of September 30, 2022. The fair value has been estimated using publicly available prices for some of the assets, and business partners' estimates for assets with prices not readily available, due to the relatively small size of the industry in which they can be used.

During the three and nine months ended September 30, 2022, the Company recorded write-downs of property and equipment of $24,000 and $370,000, respectively. During the nine months ended September 30, 2022, write-downs of $320,000 were related to the Radiance Beauty licensing agreement. See Note 6 for further discussion of the licensing agreement. During the three and nine months ended September 30, 2021, the Company recorded a write-down of property and equipment related to Archipelago in the amount of $1.1 million and $1.3 million, respectively.

5. Investments and Fair Value Instruments

Investments

The investments are carried at fair value, based on quoted market prices or other readily available market information. Unrealized and realized gains and losses are recognized as other income in the condensed consolidated statements of operations and comprehensive loss.

The following tables summarize the amortized cost and fair value of the investment securities portfolio at September 30, 2022 and December 31, 2021.

(Dollars in thousands)	Amortized Cost	Unrealized Gains	Unrealized Losses	Estimated Fair Value
September 30, 2022				
Cash equivalents:				
Money market funds	$ 20,477	$ —	$ —	$ 20,477
Total Assets at Fair Value	$ 20,477	$ —	$ —	$ 20,477

(Dollars in thousands)	Amortized Cost	Unrealized Gains	Unrealized Losses	Estimated Fair Value
December 31, 2021				
Cash equivalents:				
Money market funds	$ 26,842	$ —	$ —	$ 26,842
Total Assets at Fair Value	$ 26,842	$ —	$ —	$ 26,842

The Company did not have any investment categories that were in a continuous unrealized loss position for more than twelve months as of September 30, 2022.

Fair Value Measurement

The fair value of the investment securities at September 30, 2022 were as follows:

	Fair Value Measurements at September 30, 2022			
(Dollars in thousands)	Level 1	Level 2	Level 3	Total
Assets at Fair Value				
Cash equivalents:				
Money market funds	$ 20,477	$ —	$ —	$ 20,477
Total Assets at Fair Value	$ 20,477	$ —	$ —	$ 20,477

The fair value of the investment securities at December 31, 2021 were as follows:

	Fair Value Measurements at December 31, 2021			
(Dollars in thousands)	Level 1	Level 2	Level 3	Total
Assets at Fair Value				
Cash equivalents:				
Money market funds	$ 26,842	$ —	$ —	$ 26,842
Total Assets at Fair Value	$ 26,842	$ —	$ —	$ 26,842

The Company uses the market approach technique to value its financial instruments and there were no changes in valuation techniques during 2022 or 2021. The Company's financial instruments consist primarily of cash and cash equivalents, accounts receivable and other receivables, accounts payable, accrued liabilities, and notes payable. For accounts receivable and other receivables, accounts payable, accrued liabilities, and notes payable the carrying amounts of these financial instruments as of September 30, 2022 and December 31, 2021 were considered representative of their fair values due to their short term to maturity or repayment. Cash equivalents are carried at cost, which approximates their fair value.

The Company's Level 3 liabilities consist of a contingent liability resulting from the Anawah, Inc. ("Anawah") acquisition as described in Note 15, as well as preferred investment options related to the August 2022 Registered Direct Offering described in Note 11. As of December 31, 2021, the Company also had common stock warrant liabilities related to the March 2018, the June 2019, the September 2019, and the January 2021 Offerings, described in Note 11, which were reclassified to additional paid-in capital upon adoption of ASU 2020-06, as of January 1, 2022. See Note 2 for details of the adoption of ASU 2020-06.

The contingent liability related to the Anawah acquisition was measured and recorded on a recurring basis as of September 30, 2022 and December 31, 2021, using unobservable inputs, namely the Company's ability and intent to pursue certain specific products developed using technology acquired in the purchase. A significant deviation in the Company's ability and/or intent to pursue the technology acquired in the purchase could result in a significantly lower (higher) fair value measurement.

The preferred investment option liabilities were measured and recorded on a recurring basis using the Black-Scholes Model with the following assumptions at September 30, 2022:

	August 2022 Options	August 2022 Placement Agent Options
Remaining term (in years)	4.92	4.92
Expected volatility	128.5 %	128.5 %
Risk-free interest rate	4.1 %	4.1 %
Expected dividend yield	0 %	0 %

The significant input used in the fair value measurement of the Company's Level 3 options liabilities is volatility. A significant increase (decrease) in volatility could result in a significantly higher (lower) fair value measurement.

The following table sets forth the establishment of the Company's Level 3 liabilities, as well as a summary of the changes in the fair value and other adjustments (in thousands):

(Dollars in thousands)	Common Stock Warrant Liability - March 2018 Purchase Agreement	Common Stock Warrant Liability - June 2019 Offering	Common Stock Warrant Liability - September 2019 Offering	Common Stock Warrant Liability - January 2021 Offering	August 2022 Options	August 2022 Placement Agent Options	Contingent Liabilities	Total
Balance as of December 31, 2021	$ 7	$ 170	$ 223	$ 2,993	$ —	$ —	$ 2,070	$ 5,463
Reclassification upon adoption of ASU 2020-06	(7)	(170)	(223)	(2,993)	—	—	—	(3,392)
Initial recognition	—	—	—	—	3,824	191	—	4,015
Change in fair value and other adjustments	—	—	—	—	(1,791)	(89)	(70)	(1,950)
Balance as of September 30, 2022	$ —	$ —	$ —	$ —	$ 2,033	$ 102	$ 2,000	$ 4,135

The Company recorded aggregate impairment charges of $442,000 and $1.4 million during the nine months ended September 30, 2022 and 2021, respectively, related to intangible assets and other long-lived assets. The Company has classified the fair value measurements as a Level 3 measurement in the fair value hierarchy because they involve significant unobservable inputs such as cash flow projections, discount rates and management assumptions.

Assets classified as held for sale are recorded at fair value as of September 30, 2022. The Company has classified the fair value measurements as a Level 3 measurement in the fair value hierarchy as the fair value has been estimated using publicly available prices for some of the assets, and business partners' estimates for assets with prices not readily available, due to the relatively small size of the industry in which they can be used.

6. Arcadia Wellness Acquisition

On May 17, 2021, the Company’s wholly owned subsidiary Arcadia Wellness, acquired the assets of Eko, Lief, and Zola. The acquisition included consumer brands of bath and body care products such as Soul Spring, the CBD-infused botanical therapy brand, Saavy Naturals, a line of natural body care products and ProVault, a CBD-infused sports performance formula. Also included in the purchase was Zola, a coconut water sourced from Thailand.

The acquisition was recorded as a business combination, in accordance with ASC 805. The purchase price consideration for the acquisition totaled an estimated $6.1 million, of which $4.0 million in cash and $2.1 million in the form of 827,401 shares of the Company’s common stock, was paid during the month of May 2021. The cash consideration paid for the acquisition was funded by cash on hand.

Acquisition costs are not included as components of consideration transferred and instead are accounted for as expenses in the period in which the costs are incurred. The Company incurred costs related to the Arcadia Wellness acquisition of approximately $850,000 included in selling, general and administrative expenses in the Company's consolidated statements of operations and comprehensive loss for the nine months ended September 30, 2021.

The Company performed an allocation of purchase price as of the acquisition date based on management's estimates of fair value. The Company believes its estimates and assumptions are reasonable.

The following table presents the allocation of the purchase price of the assets acquired at fair value at the acquisition date:

	Purchase Price Allocation
Inventory	$ 840
Prepaid and other current assets	62
Fixed assets	308
Deposits	82
Customer list	360
Trade names and trademarks	2,900
Formulations	260
Goodwill	1,240
Total consideration allocated	$ 6,052

The former shareholders of Eko, Lief, and Zola remain responsible for their pre-acquisition liabilities. In connection with the acquisition, the Company entered into a lease agreement for the use of offices, production equipment acquired, and storage warehouses. The lease was effective on May 17, 2021 and has a term of 3 years.

For the period from January 1, 2022 to September 30, 2022, the Company recognized approximately $5.6 million of revenue and $1.3 million of net loss relating to Arcadia Wellness, which included charges related to the Radiance Beauty licensing agreement discussed below, as well as the amortization of acquired intangible assets.

For the period from May 17, 2021 to December 31, 2021, the Company recognized approximately $4.3 million of revenue and $7.5 million of net loss relating to Arcadia Wellness, which included charges for the amortization of acquired intangible assets.

Acquired intangible assets of $3.5 million include trade names and trademarks of $2.9 million (indefinite useful life), customer list of $360,000 (fifteen-year useful life) and formulations of $260,000 (ten-year useful life). For impairments related to the acquired intangible assets see Note 7.

The total weighted average amortization period for the acquired intangibles is 12.9 years.

The acquisition produced $1.2 million of goodwill, which was fully impaired during the year ended December 31, 2021, due to weakness in some of the newly acquired consumer product margins, combined with a volatile economic climate and higher than normal inflation. Goodwill arising from the Arcadia Wellness acquisition was not deductible for tax purposes.

On July 8, 2022, the Company entered into a licensing agreement with Radiance Beauty. Under the terms of the licensing agreement, Radiance Beauty was granted an exclusive, transferable, sublicensable, perpetual, worldwide license to use the Saavy Naturals™ mark and to modify, manufacture, distribute, market and sell related products. In addition, as part of the licensing agreement, Radiance Beauty received the remaining accounts receivables and inventory balances after July 31, 2022, certain equipment, as well as three months of salaries in the amount of $355,000 and rent, maintenance and utilities in the amount of $19,000. Radiance Beauty is subleasing space from the Company and will pay the Company a 4% royalty of gross sales of products beginning January 1, 2023. During the nine months ended September 30, 2022, accounts receivables and inventories of $21,000 and $394,000, respectively, were written down. In addition, property and equipment and intangible assets were written down by $320,000 and $72,000, respectively, during the nine months ended September 30, 2022.

Supplemental Pro-Forma Results of Operations (Unaudited)

The following unaudited pro-forma condensed consolidated results of operations for the three and nine months ended September 30, 2022 and 2021, have been prepared as if the acquisition of Arcadia Wellness had occurred on January 1, 2021 and includes adjustments for amortization of intangibles, and the addition to basic and diluted weighted average number of shares outstanding.

	For the Three Months Ended September 30,		For the Nine Months Ended September 30,	
	2022 (Pro forma)	2021 (Pro forma)	2022 (Pro forma)	2021 (Pro forma)
Total revenues	$ 1,878	$ 2,376	$ 8,956	$ 6,892
Net loss	(2,877)	(2,836)	(11,284)	(8,296)
Net loss attributable to common stockholders	$ (2,867)	$ (2,175)	$ (11,132)	$ (7,109)
Weighted average shares - Basic and diluted	24,552,543	22,175,423	22,984,816	21,286,380
Net loss per share attributable to common stockholders:				
Basic and diluted	$ (0.12)	$ (0.10)	$ (0.48)	$ (0.33)

7. Intangible assets, net

The Company's intangible assets, net, consist of the following:

	September 30, 2022			December 31, 2021		
	Gross Carrying Amount (2)	Accumulated Amortization	Net Carrying Amount	Gross Carrying Amount (1)	Accumulated Amortization	Net Carrying Amount
Amortized intangible assets						
Intellectual property	$ 254	$ 141	$ 113	$ 258	$ 107	$ 151
Customer lists	64	32	32	71	26	45
Total amortizable intangible assets	$ 318	$ 173	$ 145	$ 329	$ 133	$ 196
Indefinite-lived intangible assets						
Brands and trademarks	$ 228	$ —	$ 228	$ 288	$ —	$ 288
Total intangible asset, net	$ 546	$ 173	$ 373	$ 617	$ 133	$ 484

(1) The gross carrying amounts included in this table reflect the effects of the impairments of intangible assets recorded during the year ended December 31, 2021, when the Company estimated an overall decrease in the sales forecast for AW products, due to an inventory item rationalization, in addition to a decrease in the sales forecast of ISI seeds, related to the saturated hemp seed market. As a result, Arcadia performed a quantitative intangible assets impairment test. The Company used a discounted cash flow approach to develop the fair value of the acquired intellectual property, customer lists, brands and trademarks. As a result of this assessment, Arcadia recorded an impairment of intangible assets in the amount of $3.3 million in the condensed consolidated statements of operations and comprehensive loss for the year ended December 31, 2021.

(2) The Company recorded an impairment of intangible assets in the amount of $72,000 during the nine months ended September 30, 2022 related to the Radiance Beauty licensing agreement.

Intellectual property and customer lists will be amortized based on their useful lives ranging between 4 and 15 years. As of September 30, 2022, future amortization of intellectual property and customer lists is as follows:

Year Ending December 31,		
2022 (excluding the nine months ended September 30, 2022)	$	13
2023		53
2024		53
2025		4
2026		4
Thereafter		18
Total	$	145

8. Consolidated Joint Venture

In 2019, the Company and Legacy Ventures Hawaii, LLC, a Nevada limited liability company ("Legacy"), formed Archipelago Ventures Hawaii, LLC, a Delaware limited liability company and entered into a Limited Liability Company Operating Agreement (the "Operating Agreement"). The Company and Legacy formed Archipelago to develop, extract and commercialize hemp-derived products from industrial hemp grown in Hawaii.

Pursuant to the Operating Agreement, a joint operating committee consisting of two individuals appointed by the Company and two individuals appointed by Legacy will manage Archipelago. As of September 30, 2022, the Company and Legacy hold 50.75% and 49.25% interests in Archipelago, respectively, and have made capital contributions to Archipelago of $3.1 million and $3.0 million, respectively, as determined by the joint operating committee. The Operating Agreement includes indemnification rights, non-competition obligations, and certain rights and obligations in connection with the transfer of membership interests, including rights of first refusal.

The Company consolidates Archipelago in the condensed consolidated financial statements after eliminating intercompany transactions. Net loss attributable to non-controlling interest of $10,000 and $152,000 is recorded as an adjustment to net loss to arrive at net loss attributable to common stockholders for the three and nine months ended September 30, 2022, respectively. Net loss attributable to non-controlling interest of $661,000 and $1.2 million was recorded as an adjustment to net loss to arrive at net loss attributable to common stockholders for the three and nine months ended September 30, 2021, respectively. Legacy's equity interests are presented as non-controlling interests on the condensed consolidated balance sheets. Refer to Note 1 for basis of presentation.

In October 2021, Arcadia and Legacy mutually agreed to wind down the cultivation activities of Archipelago, due to regulatory challenges and a saturated hemp market.

9. Collaborative Arrangements

In August 2017, the Company entered into a collaborative arrangement for the research, development and commercialization of an improved wheat quality trait in North America. This collaborative arrangement is a contractual agreement with Corteva AgriScience ("Corteva") and involves a joint operating activity where both Arcadia and Corteva are active participants in the activities of the collaboration. Arcadia and Corteva participate in the research and development, and Arcadia has the primary responsibility for the intellectual property strategy while Corteva will generally lead the marketing and commercialization efforts. Both parties are exposed to significant risks and rewards of the collaboration and the agreement includes both cost sharing and profit sharing. The activities are performed with no guarantee of either technological or commercial success.

The Company accounts for research and development ("R&D") costs in accordance ASC 730, *Research and Development*, which states R&D costs must be charged to expense as incurred. Accordingly, internal R&D costs are expensed as incurred. Third-party R&D costs are expensed when the contracted work has been performed or as milestone results are achieved.

10. Leases

Operating Leases

As of September 30, 2022, the Company leases office space in Davis, CA, and Dallas, TX, as well as additional buildings, land and equipment. Leases with an initial term of 12 months or less are not recorded on the balance sheet; the Company recognizes lease expense for these short-term leases on a straight-line basis. The Company subleases a portion of the Davis office lease to third parties. In May 2022, the Company terminated its lease for office space in Chesterfield, MO effective September 30, 2022. The original lease term was scheduled to expire in May 2024. As a result, the Company paid $47,000 in early termination fees during the nine months ended September 30, 2022. In addition, the Company subleased the facility in Chatsworth, CA to Radiance Beauty as part of the licensing agreement beginning November 1, 2022 for the remainder of the lease term. During the nine months ended September 30, 2022, the Company entered into an agreement to lease office space in Dallas, TX. The new lease commenced in July 2022.

Some leases (the Davis and Dallas offices, a warehouse, and a copy machine) include one or more options to renew, with renewal terms that can extend the lease term from one to six years. The exercise of lease renewal options is at the Company's sole discretion.

The Company's lease agreements do not contain any material variable lease payments, material residual value guarantees or material restrictive covenants. Leases consisted of the following (in thousands):

Leases	Classification	September 30, 2022	December 31, 2021
Assets			
Operating lease assets	Right of use asset	$ 2,073	$ 3,081
Total leased assets		$ 2,073	$ 3,081
Liabilities			
Current - Operating	Operating lease liability- current	$ 986	$ 1,074
Noncurrent - Operating	Operating lease liability- noncurrent	1,269	2,220
Total leased liabilities		$ 2,255	$ 3,294

Lease Cost	Classification	Three Months Ended September 30, 2022	Three Months Ended September 30, 2021	Nine Months Ended September 30, 2022	Nine Months Ended September 30, 2021
Operating lease cost	SG&A and R&D Expenses	$ 271	$ 319	$ 815	$ 955
Short term lease cost (1)	R&D Expenses	(7)	37	4	67
Short term lease cost	SG&A Expenses	—	14	0	29
Sublease income (2)	SG&A and R&D Expenses	(99)	(10)	(276)	(43)
Net lease cost		$ 165	$ 360	$ 543	$ 1,008

(1) Short term lease cost consists of field trial lease agreements with a lease term of 12 months or less.

(2) Sublease income is recorded as a reduction to lease expense.

Lease Term and Discount Rate	September 30, 2022	December 31, 2021
Weighted-average remaining lease term (years)	2.3	2.7
Weighted-average discount rate	6.4%	6.0%

11. Equity Financing

Private Placements

In January 2021, the Company issued in a private placement offering (the "January 2021 Private Placement") pursuant to a securities purchase agreement ("January 2021 Purchase Agreement") (i) 7,876,784 shares of its common stock, and (ii) warrants to purchase up to 3,938,392 shares of common stock at an exercise price of $3.13 per share (the "January 2021 Warrants") and raised total gross proceeds of $25.1 million. The January 2021 Warrants are exercisable at any time at the option of the holder and expire 5.5 years from the date of issuance. In connection with the January 2021 Private Placement, the Company granted to a placement agent warrants to purchase a total of 393,839 shares of Common Stock (the "January 2021 Placement Agent Warrants") that have an exercise price per share equal to $3.99 and a term of 5.5 years from the date of issuance.

The common stock warrants are classified as a liability within Level 3 due to a contingent cash payment feature. The Company utilized a Black Scholes Merton model on January 28, 2021 with the following assumptions: volatility of 123.8%, stock price of $2.88 and risk-free rate of 0.5%. The estimated fair value of the common stock warrant liability was subsequently remeasured at December 31, 2021 with the changes recorded on the Company's consolidated statements of operations and comprehensive loss.

The January 2021 Placement Agent Warrants were issued for services performed by the placement agent as part of the January 2021 Private Placement and were treated as offering costs. The value of the January 2021 Placement Agent Warrants was determined to be $942,000, calculated using a Black-Scholes Model. The Company incurred additional offering costs totaling $1.9 million that consist of direct incremental legal, advisory, accounting and filing fees relating to the January 2021 Private Placement. The offering costs, inclusive of the January 2021 Placement Agent Warrants, totaled $2.8 million and allocated to the common stock warrant liability and the common stock using their relative fair values. A total of $769,000 was allocated to the common stock warrant liability and expensed and the remaining $2.0 million was allocated to the common stock and offset to additional paid in capital.

In March 2018, the Company issued in a private placement offering (the "March 2018 Private Placement") pursuant to a securities purchase agreement ("March 2018 Purchase Agreement") (i) 300,752 shares of its common stock and (ii) warrants to purchase up to 300,752 shares of common stock at an initial exercise price equal to $45.75 (the "March 2018 Warrants") and raised total gross proceeds of $10.0 million. The March 2018 Warrants are exercisable at any time at the option of the holder and expire five years from the date of issuance. In connection with the March 2018 Private Placement, the Company granted to a placement agent warrants to purchase a total of 15,038 shares of Common Stock (the "March 2018 Placement Agent Warrants") that have an exercise price per share equal to $41.5625 and a term of five years from the date of issuance.

The number of shares of common stock and the number and exercise price of the March 2018 Warrants issued in the March 2018 Private Placement were subject to adjustments as provided in the March 2018 Purchase Agreement. Following the adjustments as provided in the March 2018 Purchase Agreement, the number of shares issued to the purchasers was 1,201,634, the total number of shares issuable upon exercise of the March 2018 Warrants was 1,282,832 and the per share exercise price of the March 2018 Warrants was $10.7258.

Registered Direct Offerings

On May 11, 2018, the Company filed a shelf Registration Statement on Form S-3 with the SEC which was declared effective on June 8, 2018 ("2018 Shelf Registration Statement"). On April 21, 2022, the Company filed a shelf Registration Statement on Form S-3 with the SEC which was declared effective on May 12, 2022 ("2022 Shelf Registration Statement"). Each of the 2018 Shelf Registration Statement and the 2022 Shelf Registration Statement allows the Company to sell any combination of common stock, preferred stock, warrants and units consisting of such securities in one or more offerings from time to time having aggregate offering prices of up to $50.0 million. The Company ceased being able to use the 2018 Shelf Registration Statement after June 8, 2021, the three-year anniversary of its effective date. The 2022 Shelf Registration Statement may no longer be used after May 12, 2025, the three-year anniversary of its effective date.

In August 2022, the Company entered into a securities purchase agreement (the "August 2022 Purchase Agreement") pursuant to which it sold (i) 2,450,000 registered shares of its common stock, pursuant to the 2022 Shelf Registration Statement, (ii) pre-funded common stock purchase warrants (the "Pre-Funded Warrants") to purchase up to 2,272,506 shares of common stock, at an exercise price of $0.0001 per share, which Pre-Funded Warrants were registered under the 2022 Shelf Registration Statement, and (iii) unregistered preferred investment options (the "August 2022 Options") to purchase up to 4,722,506 shares of common stock, at an exercise price of $0.93376 per share, in a private placement, for total gross proceeds of $5.0 million (the "August 2022 Registered Direct Offering"). The August 2022 Registered Direct Offering closed on August 16, 2022. The August 2022 Pre-Funded Warrants became exercisable upon issuance and are exercisable until exercised in full. The August 2022 Options became exercisable upon issuance and expire 5 years after the date of issuance. In connection with the August 2022 Registered Direct Offering, the Company granted to a placement agent preferred investment options ("August 2022 Placement Agent Options") to purchase a total of 236,125 shares of common stock that have an exercise price per share equal to $1.32 and a term of five years.

The August 2022 Options and August 2022 Placement Agent Options are classified as liabilities within Level 3 due to a certain early settlement provisions that preclude them from equity classification. The Company utilized a Black-Scholes Merton model on August 16, 2022 with the following assumptions: volatility of 128.46%, stock price of $0.94, risk-free rate of 2.97% and a term of 5 years. The estimated fair value of the common stock option liabilities was subsequently remeasured at September 30, 2022 with the changes recorded on the Company's consolidated statements of operations and comprehensive loss.

The August 2022 Placement Agent Options were issued for services performed by the placement agent as part of the August 2022 Registered Direct Offering and were treated as offering costs. The value of the August 2022 Placement Agent Options was determined to be $191,000, calculated using a Black-Scholes Model. The Company incurred additional offering costs totaling $488,000 that consist of direct incremental legal, advisory, accounting and filing fees relating to the August 2022 Registered Direct Offering. The offering costs, inclusive of the August 2022 Placement Agent Options, totaled $679,000 and were allocated to the common stock option liabilities, the common stock and Pre-Funded Warrants using their relative fair values. A total of $314,000 was allocated to the common stock option liabilities and expensed while the remaining $365,000 was allocated to the common stock and Pre-Funded Warrants and offset to additional paid in capital.

In December 2020, the Company entered into a securities purchase agreement (the "December 2020 Purchase Agreement") pursuant to which it sold (i) 2,618,658 registered shares of its common stock pursuant to the 2018 Shelf Registration Statement and (ii) unregistered warrants to purchase 2,618,658 shares of its common stock (the "December 2020 Warrants") in a private placement, for total gross proceeds of $8.0 million (the "December 2020 Registered Direct Offering"). The December 2020 Registered Direct Offering closed on December 22, 2020. The December 2020 Warrants have an exercise price of $3.00 per share, became exercisable upon issuance and expire 5.5 years after the date of issuance. In connection with the December 2020 Registered Direct Offering, the Company granted to a placement agent warrants to purchase a total of 130,933 shares of common stock ("December 2020 Placement Agent Warrants") that have an exercise price per share equal to $3.8188 and a term of five years.

In September 2019, the Company entered into a securities purchase agreement (the "September 2019 Purchase Agreement") pursuant to which it sold (i) 1,318,828 registered shares of its common stock pursuant to the 2018 Shelf Registration Statement and (ii) unregistered warrants to purchase 659,414 shares of its common stock (the "September 2019 Warrants") in a private placement, for total gross proceeds of $10.0 million (the "September 2019 Registered Direct Offering"). The September 2019 Registered Direct Offering closed on September 5, 2019. The September 2019 Warrants have an exercise price of $7.52 per share, became exercisable upon issuance and expire 5.5 years after the date of issuance. In connection with the September 2019 Registered Direct Offering, the Company granted to a placement agent warrants to purchase a total of 65,942 shares of common stock ("September 2019 Placement Agent Warrants") that have an exercise price per share equal to $9.4781 and a term of five years.

In June 2019, the Company entered into a securities purchase agreement (the "June 2019 Purchase Agreement") pursuant to which it sold (i) 1,489,575 registered shares of its common stock pursuant to the 2018 Shelf Registration Statement and (ii) unregistered warrants to purchase 1,489,575 shares of its common stock (the "June 2019 Warrants") in a private placement, for total gross proceeds of $7.5 million (the "June 2019 Registered Direct Offering"). The June 2019 Registered Direct Offering closed on June 14, 2019. The June 2019 Warrants have an exercise price of $5.00 per share, became exercisable upon issuance and expire 5.5 years after the date of issuance. In connection with the June 2019 Registered Direct Offering, the Company granted to a placement agent warrants to purchase a total of 74,479 shares of common stock ("June 2019 Placement Agent Warrants") that have an exercise price per share equal to $6.2938 and a term of five years.

In June 2018, the Company entered into a securities purchase agreement (the “June 2018 Purchase Agreement”) pursuant to which it sold (i) 1,392,345 registered shares of its common stock pursuant to the 2018 Shelf Registration Statement and (ii) unregistered warrants to purchase 1,392,345 shares of its common stock (the “June 2018 Warrants”) in a private placement, for total gross proceeds of $14.0 million (the “June 2018 Registered Direct Offering”). The June 2018 Registered Direct Offering closed on June 14, 2018. The June 2018 Warrants have an exercise price of $9.94 per share, became exercisable upon issuance and expire 5.5 years after the date of issuance. In connection with the June 2018 Registered Direct Offering, the Company granted to a placement agent warrants to purchase a total of 69,617 shares of common stock (“June 2018 Placement Agent Warrants”) that have an exercise price per share equal to $12.568 and a term of five years.

12. Warrants and Options

Equity Classified Common Stock Warrants

The Company issued the following warrants to purchase shares of its common stock, which are outstanding as of September 30, 2022 or December 31, 2021, respectively. These warrants are exercisable any time at the option of the holder until their expiration date.

	Issuance Date	Term	Exercise Price Per Share	Exercised during the Year Ended December 31, 2021	Outstanding at December 31, 2021	Exercised during the Nine Months Ended September 30, 2022	Outstanding at September 30, 2022
August 2022 Pre-Funded Warrants	August 2022	perpetual	$ 0.00	—	—	—	2,272,506
January 2021 Placement Agent Warrants	January 2021	5.5 years	$ 3.99	—	393,839	—	393,839
January 2021 Service and Performance Warrants (1)	January 2021	2 years	$ 3.08	—	7,500	—	7,500
December 2020 Warrants	December 2020	5.5 years	$ 3.00	—	2,618,658	—	2,618,658
December 2020 Placement Agent Warrants	December 2020	5 years	$ 3.82	—	130,933	—	130,933
July 2020 Warrants	July 2020	5.5 years	$ 3.85	—	641,416	—	641,416
July 2020 Placement Agent Warrants	July 2020	5.5 years	$ 4.97	—	32,071	—	32,071
May 2020 Warrants	May 2020	5 years	$ 4.78	—	1,392,345	—	1,392,345
May 2020 Placement Agent Warrants	May 2020	5 years	$ 6.13	—	69,617	—	69,617
March 2020 Service and Performance Warrants (1)	March 2020	3 years	$ 2.50	—	18,350	—	18,350
February 12, 2020 Service and Performance Warrants (1)(3)	February 2020	2 years	$ 4.71	—	150,000	—	—
February 3, 2020 Service and Performance Warrants (1)(3)	February 2020	2 years	$ 4.91	—	10,000	—	—
September 2019 Placement Agent Warrants	September 2019	5 years	$ 9.48	—	65,942	—	65,942
June 2019 Placement Agent Warrants	June 2019	5 years	$ 6.29	—	74,479	—	74,479
April 2019 Service and Performance Warrants (1)	April 2019	5 years	$ 6.18	—	145,154	—	145,154
June 2018 Placement Agent Warrants	June 2018	5 years	$ 12.57	—	69,617	—	69,617
March 2018 Placement Agent Warrants	March 2018	5 years	$ 41.56	—	15,038	—	15,038
January 2021 Warrants (2)	January 2021	5.5 years	$ 3.13	—	3,938,392	—	3,938,392
September 2019 Warrants (2)	September 2019	5.5 years	$ 7.52	—	659,414	—	659,414
June 2019 Warrants (2)	June 2019	5.5 years	$ 5.00	—	435,830	—	435,830
June 2018 Warrants (2)	June 2018	5.5 years	$ 9.94	—	—	—	—
March 2018 Warrants (2)	March 2018	5 years	$ 10.73	—	641,416	—	641,416
Total				—	11,510,011	—	13,622,517

(1) The Company issued service and performance warrants (“Service and Performance Warrants”) in connection with professional services agreements with non-affiliated third party entities.

(2) Certain warrants contain a contingent cash payment feature and therefore were accounted for as a liability at the date of issuance and were adjusted to fair value at each balance sheet date. Upon adoption of ASU No. 2020-06 on January 1, 2022, all of the common stock warrant liabilities have been reclassified to equity classified common stock warrants, due to the elimination of the contingent cash payments as criteria for liability classification.

(3) These warrants expired in February 2022.

Liability Classified Preferred Investment Options

The preferred investment options issued in connection with the August 2022 Registered Direct Offering contain certain early settlement provisions that preclude them from equity classification and therefore were accounted for as liabilities at the date of issuance and are adjusted to fair value at each balance sheet date. The change in fair value of the options liabilities is recorded as change in fair value of common stock warrant and option liabilities in the consolidated statements of operations and comprehensive loss. The key terms and activity of the liability classified preferred investment options are summarized as follows:

	Issuance Date	Term	Exercise Price Per Share	Exercised during the Year Ended December 31, 2021	Outstanding at December 31, 2021	Exercised during the Nine Months Ended September 30, 2022	Outstanding at September 30, 2022
August 2022 Options	August 2022	5 years	$ 0.93	—	—	—	4,722,506
August 2022 Placement Agent Options	August 2022	5 years	$ 1.32	—	—	—	236,125
Total				—	—	—	4,958,631

13. Stock-Based Compensation and Employee Stock Purchase Program

Stock Incentive Plans

The Company has two equity incentive plans: the 2006 Stock Plan (“2006 Plan”) and the 2015 Omnibus Equity Incentive Plan (“2015 Plan”).

In 2006, the Company adopted the 2006 Plan, which provided for the granting of stock options to executives, employees, and other service providers under terms and provisions established by the Board of Directors. The Company granted non-statutory stock options (“NSOs”) under the 2006 Plan until May 2015, when it was terminated as to future awards, although it continues to govern the terms of options that remain outstanding and were issued under the 2006 Plan. The 2015 Plan became effective upon the Company’s IPO in May 2015 and all shares that were reserved, but not issued, under the 2006 Plan were assumed by the 2015 Plan. Upon effectiveness, the 2015 Plan had 154,387 shares of common stock reserved for future issuance, which included 10,637 that were transferred to and assumed by the 2015 Plan. The 2015 Plan provides for automatic annual increases in shares available for grant. In addition, shares subject to awards under the 2006 Plan that are forfeited or canceled will be added to the 2015 Plan. The 2015 Plan provides for the grant of incentive stock options (“ISOs”), NSOs, restricted stock awards, stock units, stock appreciation rights, and other forms of equity compensation, all of which may be granted to employees, officers, non-employee directors, and consultants. The exercise price for ISOs and NSOs will be granted at a price per share not less than the fair value of our common stock at the date of grant. Options granted generally vest over a four-year period; however, there might be alternative vesting schedules, as approved by the Board. Options granted, once vested, are generally exercisable for up to 10 years, after grant to the extent vested.

In June 2019, the shareholders approved an amendment to the Company’s 2015 Plan for a one-time increase to the number of shares of common stock that may be issued under the 2015 Plan by 120,000 shares. On May 17, 2021, upon completion of the Arcadia Wellness transaction, the Company granted 248,000 inducement stock option pursuant to Rule 5635(c)(4) of the Nasdaq Listing Rules. On May 28, 2021, the Company filed a registration statement on Form S-8 to register the issuance of shares upon exercise of these inducement stock options. On February 2, 2022, Stanley Jacot, Jr. was hired as the new president and chief executive officer of the Company. The Company granted Mr. Jacot an inducement stock option to purchase 316,108 shares of the Company’s common stock pursuant to Rule 5635(c)(4) of the Nasdaq Listing Rules. The Company has not filed a registration statement on Form S-8 to register the issuance of shares upon exercise of this inducement stock option. The inducement options grants have been issued outside of the 2015 Plan, but are subject to the terms and conditions of the 2015 Plan. As of September 30, 2022, a total of 2,484,005 shares of common stock were reserved for issuance under the 2015 Plan, of which 439,867 shares of common stock are available for future grant. As of September 30, 2022, a total of 7,813 and 2,044,138 options are outstanding under the 2006 and 2015 Plans, respectively. As of December 31, 2021, a total of 8,240 and 1,345,955 options were outstanding under the 2006 and 2015 Plans, respectively. As of September 30, 2022 a total of 349,783 inducement options are outstanding.

The following is a summary of stock option information and weighted average exercise prices under the Company's stock incentive plans (in thousands, except share data and price per share):

	Shares Subject to Outstanding Options	Weighted-Average Exercise Price Per Share	Aggregate Intrinsic Value
Outstanding — Balance at December 31, 2021	1,422,195	$ 5.28	$ —
Options granted	1,320,322	1.11	297.00
Options exercised	—	—	
Options forfeited	(266,347)	2.29	
Options expired	(74,436)	6.04	
Outstanding — Balance at September 30, 2022	2,401,734	$ 3.29	
Vested and expected to vest — September 30, 2022	2,115,782	$ 3.55	
Exercisable — September 30, 2022	873,633	$ 6.59	$ —

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 our Board of Directors for each of the respective periods. The intrinsic value of options exercised was $0 for both quarters ended September 30, 2022 and 2021.

As of September 30, 2022, there was $1.3 million of unrecognized compensation cost related to unvested stock-based compensation grants that will be recognized over the weighted-average remaining recognition period of 2.5 years.

On December 14, 2021, Matt Plavan provided notice to the Company of his resignation as Arcadia's president, chief executive officer and director, effective as of December 31, 2021. On December 19, 2021, Arcadia and Mr. Plavan entered into a Separation and Release Agreement (the "Separation Agreement") which provided that the vesting of all unvested options previously issued to Mr. Plavan accelerated pursuant to the terms of the Separation Agreement. In addition, the Separation Agreement extended the post-termination exercise period of the accelerated options from 90 days to up to two and one-half years. The stock compensation expense related to the modification of Mr. Plavan's stock options was $154,000 and it was recognized in selling, general and administrative expenses during the year ended December 31, 2021.

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 a simplified method allowed by the SEC, and defines the term as the average of the contractual term of the options and the weighted-average vesting period for all open employee awards.

Expected Volatility—The historical volatility data was computed using the daily closing prices for the Company's shares during the equivalent period of the calculated expected term of the stock-based awards.

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 was estimated at the date of grant using a Black-Scholes option-pricing model with the following weighted-average assumption:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2022	2021	2022	2021
Expected term (years)	5.69	6.08	6.41	6.34
Expected volatility	122%	121%	122%	122%
Risk-free interest rate	2.99%	0.97%	2.59%	0.83%
Dividend yield	—	—	—	—

The Company recognized $314,000 and $897,000 of compensation expense for stock options awards for the three and nine months ended September 30, 2022, respectively. The Company recognized $354,000 and $1.0 million of compensation expense for stock options awards for the three and nine months ended September 30, 2021, respectively.

Employee Stock Purchase Plan

The Company's 2015 Employee Stock Purchase Plan ("ESPP") became effective on May 14, 2015. The ESPP allows eligible employees to purchase shares of the Company's common stock at a discount of up to 15% of their eligible compensation through payroll deductions, subject to any plan limitations. After the first offering period, which began on May 14, 2015 and ended on February 1, 2016, the ESPP provides for six-month offering periods, and at the end of each offering period, employees are able to purchase shares at 85% of the lower of the fair market value of the Company's common stock on the first trading day of the offering period or on the last day of the offering period. As of September 30, 2022, the number of shares of common stock reserved for future issuance under the ESPP is 128,914. The ESPP provides for automatic annual increases in the shares available for purchase beginning on January 1, 2016. As of September 30, 2022, 58,970 shares had been issued under the ESPP. The Company recorded $1,000 and $3,000 of ESPP related compensation expense for the three and nine months ended September 30, 2022, respectively. The Company recorded $4,000 and $12,000 of ESPP related compensation expense for the three and nine months ended September 30, 2021, respectively.

14. Income Taxes

Income tax expense during interim periods is based on applying an estimated annual effective income tax rate to year-to-date income, plus any significant unusual or infrequently occurring items that are recorded in the interim period. The computation of the annual estimated effective tax rate at each interim period requires certain estimates and significant judgment including, but not limited to, the expected operating income for the year, projections of the proportion of income earned and taxed in various jurisdictions, permanent and temporary differences, and the likelihood of recovering deferred tax assets generated in the current year. The accounting estimates used to compute the provision for income taxes may change as new events occur, more experience is obtained, additional information becomes known, or as the tax environment changes.

The interim financial statement provision for income taxes is different from the amounts computed by applying the United States federal statutory income tax rate of 21%. The Company's effective tax rate was 0.00% for each of the three and nine months ended September 30, 2022, and was -0.04% and -0.02% for the three and nine months ended September 30, 2021. The difference between the effective tax rate and the federal statutory rate of 21% was primarily due to the full valuation allowance recorded on the Company's net deferred tax assets.

The Company experienced an ownership change under IRC Section 382 as a result of the common shares issued in connection with the January 2021 Offering. This ownership change limited the Company's ability to utilize its net operating loss carryforwards prior to expiration and certain net operating loss carryforwards were written off as a result. The Company is currently conducting additional analysis regarding the valuation of the Company at the time of the ownership change to assess what, if any, portion of the limitation may be reversed. Any adjustment to the amount of limitation will not impact the deferred tax asset balance due to the full valuation allowance.

During the nine months ended September 30, 2022, there were no material changes to the Company's uncertain tax positions.

15. Commitments and Contingencies

Leases

The Company leases office and laboratory space, grain storage bins, warehouse space, farmland, and equipment under operating lease agreements having initial lease terms ranging from one 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. See Note 10.

Legal Matters

From time to time, in the ordinary course of business, the Company may become involved in certain legal proceedings. The Company currently is not a party to any material litigation or other material legal proceedings.

Contingent Liability Related to the Anawah Acquisition

In June 2005, the Company completed its agreement and plan of merger and reorganization with Anawah, to purchase the Anawah's food and agricultural research company through a non-cash stock purchase. Pursuant to the merger with Anawah, and in accordance with the ASC 805 - Business Combinations, 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 thus, the contingent liability was reduced to $3.0 million. During the third quarter of 2016, one of the programs previously accrued for was abandoned and another program previously abandoned was reactivated. During the fourth quarter of 2019, the Company determined that one of the technologies was no longer active and decided to abandon the previously accrued program. As of September 30, 2022, the Company continues to pursue a total of two development programs using this technology and believes that the contingent liability is probable. As a result, $2.0 million remains on the condensed consolidated balance sheet as an other noncurrent liability.

Contingent Liability Related to the ISI Acquisition

In August 2020, the Company acquired by merger ISI. A portion of the purchase price consideration for the acquisition in the amount of $280,000 will be recognized in two annual installments, each of up to 132,626 shares of the Company's common stock, subject to the achievement of revenue milestones in 2021 and 2022. The contingent consideration was measured and recorded at fair value. As a result of a remeasurement of the contingent consideration, we recorded a decrease to the related liability of $31,000 and $140,000 during the quarters ended March 31, 2022 and 2021, respectively. During the nine months ended September 30, 2022, the remaining contingent liability of $39,000 was written-down to $0 as the probability of achievement of the 2022 revenue milestone is remote.

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 are or will be due.

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 review 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 currently are routine audits in process relating to government grant revenues.

16. 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. As the Company had net losses for the three and nine months ended September 30, 2022 and 2021, all potentially dilutive common shares were determined to be anti-dilutive.

Securities that were not included in the diluted per share calculations because they would be anti-dilutive were as follows (in shares):

	For the Three Months Ended September 30,		For the Nine Months Ended September 30,	
	2022	2021	2022	2021
Options to purchase common stock	2,401,734	1,554,909	2,401,734	1,554,909
Warrants to purchase common stock	11,350,011	11,510,011	11,350,011	11,510,011
Preferred investment options	4,958,631	—	4,958,631	—
Total	18,710,376	13,064,920	18,710,376	13,064,920

17. Related-Party Transactions

The Company's related parties include Moral Compass Corporation ("MCC") and the John Sperling Foundation ("JSF"). The rights to the intellectual property owned by Blue Horse Labs, Inc. ("BHL") were assigned to its sole shareholder, the John Sperling Revocable Trust ("JSRT") due to BHL's dissolution and then subsequently to the JSF. The JSF is deemed a related party of the Company because MCC, the Company's largest stockholder, and the JSF share common officers and directors.

JSF receives a single digit royalty from the Company when revenue has been collected on product sales or for license payments from third parties that involve certain intellectual property developed under research funding originally from BHL. Royalty fees due to JSF were $47,000 and $64,000 as of September 30, 2022 and December 31, 2021, respectively, and are included in the condensed consolidated balance sheets as amounts due to related parties.

During the nine months ended September 30, 2021, the Company leased land on the island of Molokai, Hawaii from an entity owned by Kevin Comcowich, the Chair of the Company's Board of Directors, and his wife. The Company used to grow hemp on this land to support the operations of its joint venture Archipelago Ventures Hawaii, until the expiration of the lease in February 2022. The original lease was executed in February 2019, covered 10 acres of land, had a term of two years and provided for rent payments of $1,200 per acre per year. In March and April 2020, the Company entered into two lease amendments for two additional 10-acre parcels and two additional 15-acre parcels, at the same lease rate of $1,200 per acre per year, and with a term of two years. The Company made lease payments in the amount of $0 and $81,000 during the nine months ended September 30, 2022 and 2021, respectively.

18. Subsequent Events

Management has evaluated subsequent events through November 10, 2022, the date that the financial statements were available to be issued.

ITEM 2. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

Special Note Regarding Forward-Looking Statements

The following discussion and analysis of our financial condition and results of operations should be read in conjunction with our unaudited condensed consolidated financial statements and the related notes to those statements included herein. In addition to historical financial information, this report contains forward-looking statements that involve risks and uncertainties. Our actual results could differ materially from those discussed in the forward-looking statements. The statements contained in this report that are not purely historical are forward-looking statements within the meaning of Section 27A of the Securities Act and Section 21E of the Securities Exchange Act of 1934, as amended, or the Exchange Act. Forward-looking statements are often identified by the use of words such as, but not limited to, "anticipate," "believe," "can," "continue," "could," "estimate," "expect," "intend," "may," "plan," "project," "seek," "should," "strategy," "target," "will," "would" and similar expressions or variations intended to identify forward-looking statements. These statements are based on the beliefs and assumptions of our management based on information currently available to management. Such forward-looking statements are subject to risks, uncertainties and other important factors that could cause actual results and the timing of certain events to differ materially from future results expressed or implied by such forward-looking statements. Factors that could cause or contribute to such differences include, but are not limited to, those identified below and those discussed in the section titled "Risk Factors" included in the most recent Annual Report on Form 10-K filed by the Company. Furthermore, such forward-looking statements speak only as of the date of this report. Except as required by law, we undertake no obligation to update any forward-looking statements to reflect events or circumstances after the date of such statements.

Solely for convenience, the trademarks, service marks and trade names referred to in this report 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.

Overview

We are a producer and marketer of innovative, plant-based health and wellness products. Our history as a leader in science-based approaches to developing high value crop improvements, primarily in wheat, designed to enhance farm economics by improving the performance of crops in the field, as well as their value as food ingredients, health and wellness products, and their viability for industrial applications, has laid the foundation for our path forward. We have used non-genetically modified ("non-GMO") advanced breeding techniques to develop these proprietary innovations which we are now commercializing through the sales of seed and grain, food ingredients and products, hemp extracts, trait licensing and royalty agreements. The acquisition of the assets of Lief Holdings, LLC ("Lief"), EKO Holdings, LLC ("EKO") and Live Zola, LLC ("Zola") added bath and body care products, CBD consumer products, as well as coconut water, to our portfolio of products.

Our commercial strategy is to satisfy consumer nutrition, health and wellness demands with the superior functional benefits our crops deliver directly from the farm, enabling us to share premium economics throughout the ag-food supply chain and to build a world-class estate of high value traits and varieties. The acquisition of the Lief, EKO and Zola brands allows us to broaden our reach within the health and wellness sector.

It is also estimated by the U.S. Department of Agriculture ("USDA"), that approximately one-fifth of the FDA recommended calories consumed by people in the US are from wheat. Therefore, the market opportunity for nutritional improvements in wheat are significant not only because the wheat market itself is vast, but also because of the "share of stomach" wheat represents. Considering that most people today are not getting enough fiber or protein in their daily diets, the superior nutrient density of our non-GMO GoodWheat™ ("GoodWheat") technology can improve the dietary intake of average consumers, by increasing their fiber and protein consumption without changing the way they eat. We believe this proprietary advantage gives GoodWheat the potential to become a global standard in wheat.

Our Growth Strategy

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

- ***Accelerate the monetization of our GoodWheat™ wheat trait portfolio.*** Our proprietary IP with multiple non-GMO wheat traits have clear functional benefits, and we will continue to build partnerships across the wheat value chain. We will continue to invest in acquisition, development and retention of the requisite management and industry experience and production and logistics capacity to fully participate in, and control, the route to market for our high value food ingredients.
- ***Commercialize and Scale our Arcadia Wellness consumer brands through retail and e-commerce expansion.*** We plan to expand distribution of our consumer brands through mass market retailers, grocery store chains, and other specialty nutrition stores, as well as through e-commerce. These brands can penetrate large and growing categories through high-value, differentiated benefits, with the ability to scale and generate attractive margins. We will continue to build our commercialization and scaling expertise, refine go-to-market strategies and invest in effective brand-building.

- ***Evaluate acquisitive growth opportunities.*** We intend to evaluate potential acquisitions representing vertical integration opportunities with multiple benefits to Arcadia's growth plans. These could include integrating further into our supply chains to enhance margin capture, as well as speed to market new product innovations and food formulations.

Arcadia Wellness, LLC

In May 2021, our wholly-owned subsidiary Arcadia Wellness, LLC, acquired the assets of Eko, Lief, and Zola. We intend for Arcadia Wellness, LLC, to house all of Arcadia Biosciences consumer goods businesses, including GoodWheat, Zola Coconut Water and ProVault Topical Pain Relief, as well as SoulSpring Body Care.

Our Product Portfolio

GoodWheat™ Consumer Products

The GoodWheat brand is a portfolio of non-GMO wheat-based consumer products that simplifies food ingredient formulations for consumers that are demanding "clean labeling" in their foods, and that are willing to pay a higher retail price for products made with ingredients they recognize. Because GoodWheat increases the nutrient density directly in the primary grains and oils, it provides the mechanism for food formulation simplification naturally and cost effectively to meet evolving consumer demands.

The brand launch is a key element of the company's go-to-market strategy to achieve greater value for its innovations by participating in downstream consumer revenue opportunities. We designed the brand to make an immediate connection with consumers that products made with GoodWheat meet their demands for healthier wheat options that also taste great.

In June 2022, we launched our GoodWheat pasta available in five varieties including penne, spaghetti, fettuccine, elbows and rotini, in select retailers nationwide. Our pasta products utilizes our GoodWheat grain as the sole ingredient, providing 4X the fiber of traditional pasta and 9g protein per serving without sacrificing taste. In fact, our research shows taste parity to leading pasta brands, which is unique in the growing better-for-you pasta segment. In addition, GoodWheat is the only better-for-you pasta brand made from one simple ingredient, matching consumers' preference for cleaner labels. Additional categories of products are slated for launch in 2023.

Zola Coconut Water

We believe that natural hydration and the power of plant-based ingredients are the keys to unlock your inspiration from within, and we are proud to make delicious plant-powered beverages that provide the energy and focus you need to crush your day. From the coconut groves of Thailand, we bring you great tasting coconut water and are proud of our long-lasting relationships with partners around the world who are essential to the quality of our products.

ProVault Topical Pain Relief

ProVault's proprietary THC-Free, CBD-infused blend of natural ingredients and fast-acting cooling agents are designed to safely and effectively relieve muscle and joint pain and soothe your skin. Our products are third-party tested for potency and purity from pesticides, fungicides, microbials and heavy metals. Our topical pain relievers are formulated to address performance concerns from everyday pain to skin protection. So whether you're a true competitor, a weekend warrior or simply maintaining an active lifestyle, you can count on ProVault to help keep you in the game. We believe what you put on your body is just as important as what you put in your body.

SoulSpring Body Care

Inspired by nature's ancient remedies and crafted with care, our SoulSpring products strive to help rejuvenate and renew your mind, body, and soul. Our CBD-infused blends of natural ingredients provide a more thoughtful, holistic approach to internal balance and overall well-being. SoulSpring premium, broad spectrum CBD is extracted from naturally-grown hemp and blended with nourishing botanicals and minerals. Our CBD is purity-tested, non-pshychoactive and non-intoxicating. Our passion for wellness means thoughtfully choosing honest, natural ingredients - inspired by ancient remedies and carefully selected for their healing properties. We then mindfully blend these ingredients to retain their inner essence and natural properties.

Components of Our Statements of Operations Data

Revenues

We derive our revenues primarily from product sales and royalties.

Product revenues

Our product revenues consist primarily of sales of Arcadia Wellness products, GoodWheat grain and pasta, and GLA products. We recognize revenue from product sales when control of the product is transferred to third-party distributors and manufacturers, collectively “our customers,” which generally occurs upon delivery. Our revenues fluctuate depending on the timing of shipments of product to our customers and are reported net of estimated chargebacks, returns and losses.

Royalty revenues

Our royalty revenues consist of amounts earned from the sale of commercial products that incorporate our traits by third parties. Our royalty revenues consist of a minimum annual royalty, offset by amounts earned from the sale of products. We recognize the minimum annual royalty on a straight-line basis over the year, and we recognize royalty revenue resulting from the sale of products when the third parties transfer control of the product to their customers, which generally occurs upon shipment. Our royalty revenues can fluctuate depending on the timing of shipments of product by the third parties to their customers.

License revenues

Our license revenues consist of up-front, nonrefundable license fees, annual license fees, and subsequent milestone payments that we receive under our license agreements. Revenue generated from up-front license fees are recognized upon execution of the agreement. We recognize annual license fees when it is probable that a material reversal will not occur.

Milestone fees are variable consideration that is initially constrained and recognized only when it is probable that such amounts would not be reversed. The Company assesses when achievement of milestones are probable in order to determine the timing of revenue recognition for milestone fees. Milestones typically represent 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.

Operating Expenses

Cost of revenues

Cost of revenues relates to the sale of Arcadia Wellness, GoodWheat, and GLA products and consists of the cost of raw materials, including internal and third-party services costs related to procuring, processing, formulating, packaging and shipping our products, as well as in-licensing and royalty fees, any adjustments or write-downs to inventory or prepaid production costs.

Research and development expenses ("R&D")

Research and development expenses consist of costs incurred in the development and testing of our products and other products in development incorporating our traits. These expenses currently consist primarily of fees paid to product formulation consultants and 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. Our research and development expenses may fluctuate from period to period.

Gain on sale of Verdeca

The gain on sale of Verdeca is the gain recognized for the sale our membership interests in the Verdeca joint venture to our partner Bioceres in November 2020.

Impairment of intangible assets

Impairments of intangible assets are recorded when the fair value of intangible assets drops below its carrying amount. See Note 7 to the Condensed Consolidated Financial Statements.

Change in fair value of contingent consideration

Change in the fair value of contingent consideration is comprised of the fair value remeasurement of the liabilities associated with our contingent consideration. See Note 15 to the Condensed Consolidated Financial Statements.

Gain on sale of property and equipment, net

Gain on sale of fixed assets includes gains from the sale of tangible assets sold above their net book value.

Impairment of property and equipment, net

Impairment of property and equipment, net includes losses from tangible assets due to impairment or recoverability test charges to write down fixed assets to their fair value or recoverability value.

Selling, general and administrative expenses

Selling, general and administrative expenses consist primarily of employee costs, professional service fees, broker and sales commission fees, and overhead costs. Our selling, general, and administrative expenses may fluctuate from period to period. In connection with our commercialization activities for our consumer products, we expect to increase our investments in sales and marketing, including additional consulting fees.

Other income, net

Other income, net, consists of realized gains on corporate securities, and interest income on our cash and cash equivalents and investments.

Issuance and offering costs

Issuance and offering costs generally include placement agent, legal, advisory, accounting and filing fees related to financing transactions.

Change in the estimated fair value of common stock warrant and option liabilities

Change in the estimated fair value of common stock warrant and option liabilities is comprised of the fair value remeasurement of the liabilities associated with our financing transactions.

Income Tax Provision

Our income tax provision has not been historically significant, as we have incurred losses since our inception. The provision for income taxes consists of state and foreign income taxes. Due to cumulative losses, we maintain a valuation allowance against our U.S. deferred tax assets as of September 30, 2022 and December 31, 2021. We consider all available evidence, both positive and negative, including but not limited to: earnings history, projected future outcomes, industry and market trends, and the nature of each of the deferred tax assets in assessing the extent to which a valuation allowance should be applied against our U.S. deferred tax assets.

Results of Operations

Comparison of the Three Months Ended September 30, 2022 and 2021

	Three Months Ended September 30,		$ Change	% Change
	2022	2021		
	(In thousands except percentage)			
Revenues:				
Product	$ 1,851	$ 2,324	$ (473)	(20)%
Royalty	17	35	(18)	(51)%
License	10	17	(7)	(41)%
Total revenues	1,878	2,376	(498)	(21)%
Operating expenses (income):				
Cost of revenues	1,344	2,511	(1,167)	(46)%
Research and development	255	1,038	(783)	(75)%
Impairment of intangible assets	—	120	(120)	(100)%
Impairment of property and equipment	24	1,108	(1,084)	(98)%
Selling, general and administrative	4,835	6,312	(1,477)	(23)%
Total operating expenses	6,458	11,089	(4,631)	(42)%
Loss from operations	(4,580)	(8,713)	4,133	47%
Interest income (expense)	95	(15)	110	(733)%
Other income (expense), net	43	(7)	50	(714)%
Change in fair value of common stock warrant and option liabilities	1,880	4,777	(2,897)	(61)%
Gain on extinguishment of PPP loan	—	1,123	(1,123)	(100)%
Issuance and offering costs	(314)	—	(314)	100%
Net loss before income taxes	(2,876)	(2,835)	(41)	1%
Income tax provision	(1)	(1)	—	0%
Net loss	(2,877)	(2,836)	(41)	1%
Net loss attributable to non-controlling interest	(10)	(661)	651	(98)%
Net loss attributable to common stockholders	$ (2,867)	$ (2,175)	$ (692)	32%

Revenues

Product revenues accounted for 99% and 98% of total revenues during the three months ended September 30, 2022 and 2021, respectively. The $473,000, or 20%, decrease in product revenues for the three months ended September 30, 2022 compared to the same period in 2021 was driven by a decrease in sales of body care products primarily due to the focus on higher-margin products, and the licensing agreement with Radiance Beauty and Wellness, Inc ("Radiance Beauty") executed in July 2022, in addition to the timing of GLA orders. See Note 6 to the Condensed Consolidated Financial Statements for details of the licensing agreement.

Royalty revenues accounted for 1% of total revenues during each of the three months ended September 30, 2022 and 2021. The $17,000 of royalty revenues for the three months ended September 30, 2022 represents the proportionate share of contracted minimum annual royalty fees.

Cost of revenues

Cost of revenues decreased by $1.2 million, or 46%, during the three months ended September 30, 2022 compared to the same period in 2021 primarily due to lower revenues and lower inventory write-downs in 2022. Gross profit, calculated as total revenues less cost of revenues, was $534,000 during the three months ended September 30, 2022 compared to gross loss of $135,000 during the three months ended September 30, 2021. The increase in the gross profit was primarily due to lower inventory write-downs during the three months ended September 30, 2022.

Research and development

Research and development expenses decreased by $783,000, or 75%, during the three months ended September 30, 2022 compared to the same period in 2021 primarily driven by the Company's recent focus on commercialization, which has led to lower employee-related expenses, and related activity costs as we right-sized our research teams.

Impairment of property and equipment

During the three months ended September 30, 2022, we recognized $24,000 of impairments of property and equipment related to Arcadia Wellness. During the three months ended September 30, 2021, we recognized $1.1 million of impairments of Archipelago property and equipment related to CBD processing.

Selling, general, and administrative

Selling, general, and administrative expenses decreased by $1.5 million, or 23%, during the three months ended September 30, 2022, compared to the same period in 2021. The decrease was primarily driven by lower salaries, lease expense and consulting fees.

Change in the estimated fair value of common stock warrant and option liabilities

Change in the estimated fair value of common stock warrant and option liabilities decreased by $2.9 million during the three months ended September 30, 2022 compared to the same period in 2021. The decrease was driven by the adoption of ASU 2020-06 in January 2022, which resulted in the reclassification of common stock warrants from liability to equity, partially offset by the change in the estimated fair value of the liability classified preferred investment options issued in connection with the August 2022 Registered Direct Offering ("RDO") financing transaction.

Issuance and offering costs

Issuance and offering costs increased by $314,000 during the three months ended September 30, 2022 compared to the same period in 2021 due to the August 2022 RDO financing transaction.

Comparison of the Nine Months Ended September 30, 2022 and 2021

	Nine Months Ended September 30, 2022	Nine Months Ended September 30, 2021	$ Change	% Change
	(In thousands except percentage)			
Revenues:				
Product	$ 7,967	$ 4,506	$ 3,461	77 %
Royalty	117	86	31	36 %
License	872	17	855	5029 %
Total revenues	8,956	4,609	4,347	94 %
Operating expenses (income):				
Cost of revenues	8,250	4,954	3,296	67 %
Research and development	1,009	3,328	(2,319)	(70)%
Gain on sale of Verdeca	(1,138)	—	(1,138)	(100)%
Impairment of intangible assets	72	120	(48)	(40)%
Change in fair value of contingent consideration	(70)	(140)	70	(50)%
Impairment of property and equipment	370	1,319	(949)	(72)%
(Gain) loss on sale of property and equipment	(386)	17	(403)	(2371)%
Selling, general and administrative	13,834	16,733	(2,899)	(17)%
Total operating expenses	21,941	26,331	(4,390)	(17)%
Loss from operations	(12,985)	(21,722)	8,737	(40)%
Interest income (expense)	123	(23)	146	(635)%
Other income (expense), net	13	10,214	(10,201)	(100)%
Change in fair value of common stock warrant and option liabilities	1,880	4,601	(2,721)	(59)%
Gain on extinguishment of PPP loan	—	1,123	(1,123)	(100)%
Issuance and offering costs	(314)	(769)	455	(59)%
Net loss before income taxes	(11,283)	(6,576)	(4,707)	72 %
Income tax provision	(1)	(1)	—	0 %
Net loss	(11,284)	(6,577)	(4,707)	72 %
Net loss attributable to non-controlling interest	(152)	(1,199)	1,047	(87)%
Net loss attributable to common stockholders	$ (11,132)	$ (5,378)	$ (5,754)	107 %

Revenues

Product revenues accounted for 89% and 98% of total revenues during the nine months ended September 30, 2022 and 2021, respectively. The $3.5 million, or 77%, increase in product revenues during the nine months ended September 30, 2022 compared to the same period in 2021 was primarily driven by higher sales of the Zola coconut water and body care products, the brands acquired in May 2021, along with $2.1 million of GoodWheat grain and pasta sales this year that weren't present in 2021.

Royalty revenues accounted for 1% and 2% of total revenues during the nine months ended September 30, 2022 and 2021, respectively. The $117,000 of royalty revenues for the nine months ended September 30, 2022 represents the proportionate share of contracted minimum annual royalty fees.

License revenue accounted for 10% of total revenue during the nine months ended September 30, 2022 and is related to the Verdeca-Bioceres licensing agreement discussed below.

Cost of revenues

Cost of revenues increased by $3.3 million, or 67%, during the nine months ended September 30, 2022 compared to the same period in 2021. The increase in cost of revenues is the result of the increase in revenues. Gross profit, calculated as total revenues less cost of revenues, was $706,000 during the nine months ended September 30, 2022 compared to gross loss of $345,000 during the nine months ended September 30, 2021. The increase in the gross profit was primarily driven by the increase in license revenue related to the Verdeca-Bioceres licensing agreement during the nine months ended September 30, 2022.

Research and development

Research and development expenses decreased by $2.3 million, or 70%, during the nine months ended September 30, 2022 compared to the same period in 2021. The decrease was primarily driven by the Company's recent focus on commercialization, which has led to lower employee-related expenses, and related activity costs as we right-sized our research teams.

Gain on sale of Verdeca

In February 2012, we partnered with Bioceres to form Verdeca, which we equally owned. Verdeca was formed to develop and deregulate soybean varieties using both partners' agricultural technologies. In November 2020, Arcadia sold its membership interest in Verdeca to Bioceres in a transaction in which Arcadia received cash, shares of Bioceres stock and a royalty stream of up to $10.0 million on sales of Haab 4 ("HB4") soybean. An additional $2.0 million in cash is to be paid upon achievement by Verdeca reaching commercial plantings of at least 200,000 hectares of HB4 or China approving the HB4 soybean trait for "food and feed". During the nine months ended September 30, 2022, we recognized a gain on sale of Verdeca of $1.1 million related to the regulatory approval of the HB4 soybeans.

Impairment of intangible assets

During the nine months ended September 30, 2022, we recognized $72,000 of impairments of intangible assets related to the Radiance Beauty licensing agreement. During the nine months ended September 30, 2021, we recognized an impairment of intangible assets in the amount of $120,000 primarily as a result of a decline in the hemp seed market forecasted sales.

Change in fair value of contingent consideration

The Industrial Seed Innovations contingent consideration remeasurement resulted in a decrease of the liability in the amount of $70,000 and $140,000 during the nine months ended September 30, 2022 and 2021, respectively. See Note 15 to the Condensed Consolidated Financial Statements.

Impairment of property and equipment

During the nine months ended September 30, 2022, we recognized $370,000 of impairments of property and equipment, of which $320,000 is related to the Radiance Beauty licensing agreement. During the nine months ended September 30, 2021, we recognized $1.3 million of impairments of Archipelago property and equipment related to CBD processing.

Gain on sale of property and equipment

During the nine months ended September 30, 2022, we sold some property and equipment related to the Davis laboratory and Archipelago for net proceeds exceeding book value by $386,000. During the nine months ended September 30, 2021, we sold equipment for book value exceeding net proceeds by $17,000.

Selling, general, and administrative

Selling, general, and administrative expenses decreased by $2.9 million, or 17%, during the nine months ended September 30, 2022 compared to the same period in 2021. The decrease was primarily driven by lower salaries, lease expense and consulting fees.

Other income, net

Other income, net decreased by $10.2 million during the nine months ended September 30, 2022 compared to the same period in 2021 due to the realized gain resulting from the sale of the shares of BIOX in 2021.

Change in the estimated fair value of common stock warrant and option liabilities

Change in the estimated fair value of common stock warrant and option liabilities decreased by $2.7 million during the nine months ended September 30, 2022 compared to the same period in 2021. The decrease was driven by the adoption of ASU 2020-06 in January 2022, which resulted in the reclassification of common stock warrants from liability to equity, partially offset by the change in the estimated fair value of the liability classified preferred investment options issued in connection with the August 2022 RDO financing transaction.

Gain on extinguishment of Paycheck Protection Program ("PPP") loan

During the nine months ended September 30, 2021, we were notified by the lender that the Small Business Administration had forgiven the original PPP loan amount in full, and this resulted in a $1.1 million gain for nine months ended September 30, 2021.

Issuance and offering costs

During the nine months ended September 30, 2022, we recognized $314,000 in issuance and offering costs related to the August 2022 RDO financing transaction. During the nine months ended September 30, 2021, we recognized $769,000 in issuance and offering costs related to the January 2021 PIPE financing transaction.

Seasonality

We and our commercial partners operate in different geographies around the world and conduct field trials used for data generation, which must be conducted during the appropriate growing seasons for particular crops and markets. Demand for our consumer body care products tends to vary with major holidays and demand for coconut water products is generally higher in the summer months.

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

Liquidity, Capital Resources, and Going Concern

We have funded our operations primarily with the net proceeds from our private and public offerings of our equity securities and debt, as well as proceeds from the sale of our products and payments under license agreements, contract research agreements and government grants. Our principal use of cash is to fund our operations, which are primarily focused on commercializing our products. As of September 30, 2022, we had cash and cash equivalents of $22.7 million. For the nine months ended September 30, 2022, the Company had a net loss of $11.3 million and net cash used in operations of $11.6 million. For the twelve months ended December 31, 2021, the Company had net losses of $16.1 million and net cash used in operations of $25.9 million.

We believe that our existing cash and cash equivalents will not be sufficient to meet our anticipated cash requirements for at least the next 12 months from the issuance date of our condensed consolidated financial statements, and thus raises substantial doubt about the Company's ability to continue as a going concern. The condensed consolidated financial statements do not include any adjustments that might result from the outcome of this uncertainty.

We may seek to raise additional funds through debt or equity financings, if necessary. We may also consider entering into additional partner arrangements. Any sale of additional equity would result in dilution to our stockholders. Our incurrence of debt would result in debt service obligations, and the instruments governing our debt could provide for additional operating and financing covenants that would restrict our operations. If we do require additional funds and 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 materially harm our business, results of operations and financial condition.

Cash Flows

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

	Nine Months Ended September 30,	
	2022	2021
Net cash (used in) provided by:		
Operating activities	$ (11,621)	$ (19,208)
Investing activities	1,136	16,678
Financing activities	4,519	22,014
Net (decrease) increase in cash	$ (5,966)	$ 19,483

Cash flows from operating activities

Cash used in operating activities for the nine months ended September 30, 2022, was $11.6 million. With respect to our net loss of $11.3 million, non-cash charges including $897,000 of stock-based compensation, $686,000 of lease amortization, $1.5 million of write-downs of inventories, $370,000 of write-downs of property and equipment, $72,000 of write-downs of intangible assets, $314,000 of issuance and offering costs, and $354,000 of depreciation, were offset by adjustments in our working capital accounts of $439,000, the change in fair value of common stock warrant and option liabilities of $1.9 million, gain on sale of Verdeca of $1.1 million, $386,000 of gain on disposal of property and equipment, other non-cash income from the change in fair value of contingent consideration of $70,000, and operating lease payments of $718,000.

Cash used in operating activities for the nine months ended September 30, 2021, was $19.2 million. With respect to our net loss of $6.6 million, non-cash charges including $1.0 million of stock-based compensation, $914,000 of lease amortization, $1.8 million of write-downs of inventory, $1.3 million of write-down of fixed assets, $769,000 of issuance and offering costs, and $737,000 of depreciation were offset by adjustments in our working capital accounts of $2.4 million, $10.2 million of realized gain on corporate securities, the change in fair value of common stock warrant and option liabilities of $4.6 million, other non-cash income from the change in fair value of contingent consideration of $140,000, and operating lease payments of $984,000.

Cash flows from investing activities

Cash provided by investing activities for the nine months ended September 30, 2022 consisted of $897,000 of proceeds from sales of property and equipment, $285,000 proceeds from sale of Verdeca, partially offset by $46,000 of purchases of property and equipment.

Cash provided by investing activities for the nine months ended September 30, 2021 consisted of $21.8 million of proceeds from sales of investments, partially offset by $4.3 million of acquisitions, and $919,000 in purchases of property and equipment.

Cash flows from financing activities

Cash provided by financing activities for the nine months ended September 30, 2022 consisted of proceeds from the issuance of common stock relating to the August 2022 RDO financing transaction of $5.0 million gross proceeds and proceeds from the purchase of ESPP shares of $7,000, which were offset by payments of transaction costs related to the August 2022 RDO financing transaction of $488,000.

Cash provided by financing activities for the nine months ended September 30, 2021 consisted of proceeds from the issuance of common stock relating to the January 2021 PIPE financing transaction of $25.1 million gross proceeds, capital contributions from the non-controlling interest in our joint venture of $750,000, and proceeds from the purchase of ESPP shares of $39,000, which were offset by payments of transaction costs related to the January 2021 PIPE of $1.9 million and principal payments on debt of $2.0 million.

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 other than Verdeca, which was disposed of in November 2020.

Critical Accounting Policies 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 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 consider our critical accounting policies and estimates to be revenue recognition, determination of the provision for income taxes, and net realizable value of inventory.

ITEM 3: QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Not Required.

ITEM 4: CONTROLS AND PROCEDURES

Evaluation of Disclosure Controls and Procedures

We maintain "disclosure controls and procedures," as such term is defined in Rule 13a-15(e) under the Securities Exchange Act of 1934, or Exchange Act, that are designed to ensure that information required to be disclosed by us in reports that we file or submit under the Exchange Act is recorded, processed, summarized, and reported within the time periods specified in Securities and Exchange Commission rules and forms, and that such information is accumulated and communicated to our management, including our President and Chief Executive Officer and our Chief Financial Officer, as appropriate, to allow timely decisions regarding required disclosure. In designing and evaluating our disclosure controls and procedures, management recognized that disclosure controls and procedures, no matter how well conceived and operated, can provide only reasonable, not absolute, assurance that the objectives of the disclosure controls and procedures are met. Our disclosure controls and procedures have been designed to meet reasonable assurance standards. Additionally, in designing disclosure controls and procedures, our management necessarily was required to apply its judgment in evaluating the cost-benefit relationship of possible disclosure controls and procedures. The design of any disclosure controls and procedures also is based in part upon certain assumptions about the likelihood of future events, and there can be no assurance that any design will succeed in achieving its stated goals under all potential future conditions.

Based on their evaluation as of the end of the period covered by this Quarterly Report on Form 10-Q, our President and Chief Executive Officer and our Chief Financial Officer have concluded that, as of such date, our disclosure controls and procedures were effective at the reasonable assurance level.

Changes in Internal Control over Financial Reporting

There were no changes in our internal control over financial reporting (as such term is defined in Rule 13a-15(f) under the Exchange Act) identified in connection with the evaluation identified above that occurred during the quarter ended September 30, 2022 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

PART II. OTHER INFORMATION

ITEM 1. 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.

ITEM 1A. RISK FACTORS

In addition to the other information set forth in this Quarterly Report, you should carefully consider the factors discussed in Part I, “Item 1A. Risk Factors” in our Annual Report on Form 10-K for the year ended December 31, 2021, which could materially affect our business, financial condition, liquidity or future results. The risks described in our Annual Report on Form 10-K are not the only risks facing our company. Additional risks and uncertainties not currently known to us or that we currently deem to be immaterial also may materially adversely affect our business, financial condition, liquidity or future results.

Our failure to meet the continued listing requirements of Nasdaq could result in a delisting of our common stock, which could negatively impact the market price and liquidity of our common shares and our ability to access the capital markets.

Our common stock is listed on The Nasdaq Capital Market. If we fail to satisfy the continued listing requirements of the Nasdaq Stock Market ("Nasdaq"), such as the corporate governance requirements or the minimum closing bid price requirement, Nasdaq may take steps to delist our common stock. Such a delisting would have a negative effect on the price of our common stock, impair the ability to sell or purchase our common stock when persons wish to do so, and any delisting materially adversely affect our ability to raise capital or pursue strategic restructuring, refinancing or other transactions on acceptable terms, or at all. Delisting from The Nasdaq Capital Market could also have other negative results, including the potential loss of institutional investor interest and fewer business development opportunities.

On September 27, 3022, we received a notice from the Nasdaq Listing Qualifications Department of Nasdaq informing us that because the closing bid price of our common stock had been below $1.00 per share for 30 consecutive business days, we no longer complied with the minimum bid price requirement for continued listing on The Nasdaq Capital Market. Nasdaq Listing Rule 5550(a)(2) requires listed securities to maintain a minimum bid price of $1.00 per share, and Nasdaq Listing Rule 5810(c)(3)(A) provides that a failure to meet the minimum bid price requirement exists if the deficiency continues for a period of 30 consecutive business days. The notice had no immediate effect on the listing or the trading of our common stock on The Nasdaq Capital Market. Pursuant to Nasdaq Listing Rule 5810(c)(3)(A), the notice letter stated that we had an initial compliance period of 180 calendar days, or until March 27, 2023, to regain compliance with the minimum bid price requirement. To regain compliance, the closing bid price of our common stock must meet or exceed $1.00 per share for a minimum of 10 consecutive business days during the 180 calendar day grace period. If at any time before March 27, 2023, the bid price of our common stock closes at or above $1.00 per share for a minimum of 10 consecutive business days, Nasdaq will provide written notification that we have achieved compliance with the minimum bid price requirement, and the matter would be resolved. The notice letter also disclosed that if we do not regain compliance within the initial compliance period, we may be eligible for an additional 180-day compliance period. To qualify for additional time, we would be required to meet the continued listing requirement for market value of publicly held shares and all other initial listing standards for The Nasdaq Capital Market, with the exception of the bid price requirement, and would need to provide written notice of a plan to cure the deficiency during the second compliance period, including by effecting a reverse stock split if necessary. If the company meets these requirements, Nasdaq would inform us that we have been granted an additional 180 calendar days to regain compliance. However, if it appears to the staff of Nasdaq that we will not be able to cure the deficiency, or if we are otherwise not eligible, the staff would notify us that we will not be granted additional 180 days for compliance and will be subject to delisting at that time In the event of such notification, we may appeal the staff’s determination to delist its securities, but there can be no assurance that any such appeal would be successful. We intend to monitor the closing bid price for our common stock and will consider available strategies in an effort to satisfy the minimum bid price requirement.

ITEM 2. UNREGISTERED SALES OF EQUITY SECURITIES AND USE OF PROCEEDS

Information concerning our sales of unregistered securities during the quarter ended September 30, 2022, has previously been reported in Current Reports on Form 8-K that we filed during that quarter.

ITEM 3. DEFAULTS UPON SENIOR SECURITIES

None.

ITEM 4. MINE SAFETY DISCLOSURES

Not applicable.

ITEM 5. OTHER INFORMATION

None.

ITEM 6. EXHIBITS

The following exhibits are attached hereto or are incorporated herein by reference.

Exhibit Number	Exhibit Description	Incorporated by Reference				Filed Herewith
		Form	File No.	Exhibit	Filing Date	
4.1	Form of Pre-Funded Warrant	8-K	001-37383	4.1	8/16/2022	
4.2	Form of Preferred Investment Option	8-K	001-37383	4.2	8/16/2022	
4.3	Form of Placement Agent Preferred Investment Option	8-K	001-37383	4.3	8/16/2022	
10.1	Form of Securities Purchase Agreement	8-K	001-37383	10.1	8/16/2022	
31.1	Principal Executive Officer’s Certifications Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002					X
31.2	Principal Financial Officer’s Certifications Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002					X
32.1(1)	Certification Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002					X
32.2(1)	Certification Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002					X
101.INS	Inline XBRL Instance Document - the instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document					X
101.SCH	Inline XBRL Taxonomy Extension Schema Document					X
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase Document					X
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase Document					X
101.LAB	Inline XBRL Taxonomy Extension Label Linkbase Document					X
101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase Document					X
104.1	Cover page from the Company's Quarterly Report on Form 10-Q for the quarter ended September 30, 2022, formatted in inline XBRL (and contained in Exhibit 101)					X

(1) This certification is deemed not filed for purpose of Section 18 of the Exchange Act or otherwise subject to the liability of that section, nor shall it be deemed incorporated by reference into any filing under the Securities Act or the Exchange Act.

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned thereunto duly authorized.

	Arcadia Biosciences, Inc.
November 10, 2022	By: /s/ STANLEY E. JACOT, JR.
	Stanley E. Jacot, Jr.
	President and Chief Executive Officer
November 10, 2022	By: /s/ PAMELA HALEY
	Pamela Haley
	Chief Financial Officer

Exhibit 31.1

**CERTIFICATION OF CHIEF EXECUTIVE OFFICER
PURSUANT TO EXCHANGE ACT RULE 13a-14(a)/15d-14(a)
AS ADOPTED PURSUANT TO SECTION 302
OF THE SARBANES-OXLEY ACT OF 2002**

I, Stanley E. Jacot, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Arcadia Biosciences, Inc. for the period ended September 30, 2022;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
   - (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
   - (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
   - (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
   - (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
   - (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
   - (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Dated: November 10, 2022

/s/ STANLEY E. JACOT, JR.
Stanley E. Jacot, Jr.
President and Chief Executive Officer
(Principal Executive Officer)

Exhibit 31.2

CERTIFICATION OF CHIEF FINANCIAL OFFICER
PURSUANT TO EXCHANGE ACT RULE 13a-14(a)/15d-14(a)
AS ADOPTED PURSUANT TO SECTION 302
OF THE SARBANES-OXLEY ACT OF 2002

I, Pamela Haley, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Arcadia Biosciences, Inc. for the period ended September 30, 2022;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

   (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Dated: November 10, 2022

/s/ PAMELA HALEY
Pamela Haley
Chief Financial Officer
(Principal Financial Officer)

Exhibit 32.1

**CERTIFICATION
PURSUANT TO 18 U.S.C. SECTION 1350
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002**

In connection with the accompanying Quarterly Report of Arcadia Biosciences, Inc. (the “Company”), on Form 10-Q for the quarter ended September 30, 2022 (the “Report”), I, Stanley E. Jacot, Jr., President and Chief Executive Officer of the Company, hereby certify pursuant to 18 U.S.C. § 1350, as adopted pursuant to § 906 of the Sarbanes-Oxley Act of 2002 that:

(1) the Report fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

(2) the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Dated: November 10, 2022

/s/ STANLEY E. JACOT, JR.
Stanley E. Jacot, Jr.
President and Chief Executive Officer
(Principal Executive Officer)

Exhibit 32.2

CERTIFICATION
PURSUANT TO 18 U.S.C. SECTION 1350
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the accompanying Quarterly Report of Arcadia Biosciences, Inc. (the “Company”), on Form 10-Q for the quarter ended September 30, 2022 (the “Report”), I, Pamela Haley, Chief Financial Officer of the Company, hereby certify pursuant to 18 U.S.C. § 1350, as adopted pursuant to § 906 of the Sarbanes-Oxley Act of 2002 that:

(1) the Report fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

(2) the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Dated: November 10, 2022

/s/ PAMELA HALEY
Pamela Haley
Chief Financial Officer
(Principal Financial Officer)