UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 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: 001-40344

Akoya Biosciences, Inc.

(Exact name of registrant as specified in its charter)

Delaware	**47-5586242**
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)
100 Campus Drive, 6th Floor Marlborough, Massachusetts	**01752**
(Address of principal executive offices)	(Zip Code)

(855) 896-8401

Registrant’s telephone number, including area code)

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 Stock, par value $0.00001 per share	AKYA	Nasdaq Global Select 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 Act). Yes ☐ No ☒

Number of shares of the registrant’s common shares outstanding at October 28, 2022: 37,955,857

AKOYA BIOSCIENCES, INC.

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Akoya Biosciences, Inc.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This report contains forward-looking statements that are based on management's beliefs and assumptions and on information currently available to management. All statements contained in this report other than statements of historical fact are forward-looking statements, including statements regarding our ability to develop, commercialize and achieve market acceptance of our current and planned products and services, our research and development efforts, and other matters regarding our business strategies, use of capital, results of operations and financial position, and plans and objectives for future operations. In some cases, you can identify forward-looking statements by the words "may," "will," "could," "would," "should," "expect," "intend," "plan," "anticipate," "believe," "estimate," "predict," "project," "potential," "continue," "ongoing" or the negative of these terms or other comparable terminology, although not all forward-looking statements contain these words. These statements involve risks, uncertainties and other factors that may cause actual results, levels of activity, performance or achievements to be materially different from the information expressed or implied by these forward-looking statements. These risks, uncertainties and other factors are described under "Risk Factors," "Management's Discussion and Analysis of Financial Condition and Results of Operations," and elsewhere in this report and in other documents we file with the Securities and Exchange Commission (the "SEC") from time to time. We caution you that forward-looking statements are based on a combination of facts and factors currently known by us and our projections of the future, about which we cannot be certain. As a result, the forward-looking statements may not prove to be accurate. The forward-looking statements in this report represent our views as of the date of this report. We undertake no obligation to update any forward-looking statements for any reason, except as required by law.

Unless otherwise stated or the context otherwise indicates, references to "we," "us," "our" and similar references refer to Akoya Biosciences, Inc. and its consolidated subsidiary.

AKOYA BIOSCIENCES, INC. AND SUBSIDIARY

CONSOLIDATED BALANCE SHEETS

(in thousands, except share and per share data)

	September 30, 2022	December 31, 2021
	(unaudited)	
Assets		
Current assets		
Cash and cash equivalents	$ 51,836	$ 113,079
Marketable securities	29,868	—
Accounts receivable, net	8,680	9,444
Inventories, net	13,063	9,014
Prepaid expenses and other current assets	8,297	9,277
Total current assets	111,744	140,814
Property and equipment, net	10,492	7,487
Restricted cash	302	302
Demo inventory, net	2,064	2,548
Intangible assets, net	20,442	21,150
Goodwill	18,262	18,262
Operating lease right of use assets, net	11,307	—
Financing lease right of use assets, net	1,504	—
Other assets	340	344
Total assets	$ 176,457	$ 190,907
Liabilities and Stockholders' Equity		
Current liabilities		
Accounts payable	$ 8,172	$ 9,435
Accrued expenses and other current liabilities	14,037	13,491
Current portion of operating lease liabilities	3,004	—
Current portion of financing lease liabilities	593	—
Current portion of capital lease liabilities	—	272
Deferred revenue	5,876	4,484
Total current liabilities	31,682	27,682
Deferred revenue, net of current portion	1,477	1,330
Long-term debt, net of debt discount	52,714	32,471
Deferred tax liability, net	125	26
Capital lease liabilities, net of current portion	—	197
Operating lease liabilities, net of current portion	8,723	—
Financing lease liabilities, net of current portion	692	—
Contingent consideration liability (Note 4), net of current portion	5,956	7,850
Total liabilities	101,369	69,556
Stockholders' equity:		
Preferred Stock, $0.00001 par value; 10,000,000 shares authorized; 0 shares issued and outstanding at September 30, 2022 and December 31, 2021	—	—
Common Stock, $0.00001 par value; 500,000,000 shares authorized at September 30, 2022 and December 31, 2021; 37,947,853 and 37,424,101 shares issued and outstanding at September 30, 2022 and December 31, 2021, respectively	2	2
Additional paid in capital	223,025	217,456
Accumulated deficit	(147,873)	(96,107)
Other comprehensive loss	(66)	—
Total stockholders' equity	75,088	121,351
Total liabilities and stockholders' equity	$ 176,457	$ 190,907

See accompanying notes to consolidated financial statements.

AKOYA BIOSCIENCES, INC. AND SUBSIDIARY

CONSOLIDATED STATEMENTS OF OPERATIONS (Unaudited)
(in thousands except share & per share data)

	Three months ended		Nine months ended	
	September 30, 2022	September 30, 2021	September 30, 2022	September 30, 2021
Revenue:				
Product revenue	$ 14,438	$ 10,874	$ 41,942	$ 31,556
Service and other revenue	4,414	2,602	11,698	7,203
Total revenue	18,852	13,476	53,640	38,759
Cost of goods sold:				
Cost of product revenue	$ 5,455	$ 3,594	$ 14,733	$ 10,381
Cost of service and other revenue	2,490	1,429	7,563	4,386
Total cost of goods sold	$ 7,945	$ 5,023	$ 22,296	$ 14,767
Gross profit	$ 10,907	$ 8,453	$ 31,344	$ 23,992
Operating expenses:				
Selling, general and administrative	19,922	13,725	58,705	31,970
Research and development	5,466	3,999	16,778	10,138
Change in fair value of contingent consideration	357	224	(599)	1,050
Depreciation and amortization	1,815	1,244	4,975	3,352
Total operating expenses	27,560	19,192	79,859	46,510
Loss from operations	(16,653)	(10,739)	(48,515)	(22,518)
Other income (expense):				
Interest expense	(1,109)	(763)	(2,707)	(2,271)
Change in fair value of warrant liability	—	—	—	(2,728)
Gain on extinguishment of debt	—	—	—	2,476
Other expense, net	(89)	(126)	(395)	(244)
Loss before benefit (provision) for income taxes	(17,851)	(11,628)	(51,617)	(25,285)
Benefit (provision) for income taxes	(21)	11	(149)	23
Net loss	$ (17,872)	$ (11,617)	$ (51,766)	$ (25,262)
Dividends accrued on redeemable convertible preferred stock	—	—	—	(1,435)
Accretion of redeemable convertible preferred stock	—	—	—	(296)
Adjusted net loss attributable to common stockholders	(17,872)	(11,617)	(51,766)	(26,993)
Net loss per share attributable to common stockholders, basic and diluted	$ (0.47)	$ (0.31)	$ (1.37)	$ (1.15)
Weighted-average shares outstanding, basic and diluted	37,900,821	37,162,489	37,660,814	23,407,358

See accompanying notes to consolidated financial statements.

AKOYA BIOSCIENCES, INC. AND SUBSIDIARY

CONSOLIDATED STATEMENTS OF COMPREHENSIVE LOSS (Unaudited)
(in thousands)

	Three months ended		Nine months ended	
	September 30, 2022	September 30, 2021	September 30, 2022	September 30, 2021
Net loss	$ (17,872)	$ (11,617)	$ (51,766)	$ (25,262)
Other comprehensive loss:				
Unrealized gain (loss) on marketable securities	26	—	(66)	—
Total other comprehensive income (loss)	26	—	(66)	—
Comprehensive loss	$ (17,846)	$ (11,617)	$ (51,832)	$ (25,262)

See accompanying notes to consolidated financial statements.

AKOYA BIOSCIENCES, INC. AND SUBSIDIARY
CONSOLIDATED STATEMENTS OF REDEEMABLE CONVERTIBLE PREFERRED STOCK AND STOCKHOLDERS' EQUITY (DEFICIT) (Unaudited)
(in thousands, except share data)

	Series B Redeemable Convertible Preferred Stock		Series C Redeemable Convertible Preferred Stock		Series D Redeemable Convertible Preferred Stock		Series A Convertible Preferred Stock		Class A Common Stock		Class B Common Stock		Additional Paid in Capital	Accumulated Deficit	Accumulated other comprehensive loss	Total Stockholders' equity (deficit)
	Shares	Amount	Shares	Amount	Shares	Amount	Shares	Amount	Shares	Amount	Shares	Amount				
Balance at December 31, 2021	—	$ —	—	$ —	—	$ —	—	$ —	37,424,101	$ 2	—	$ —	$ 217,456	$ (96,107)	$ —	$ 121,351
Exercise of stock options	—	—	—	—	—	—	—	—	78,257	—	—	—	55	—	—	55
Net loss	—	—	—	—	—	—	—	—	—	—	—	—	—	(16,399)	—	(16,399)
Stock-based compensation	—	—	—	—	—	—	—	—	—	—	—	—	1,545	—	—	1,545
Balance at March 31, 2022	—	$ —	—	$ —	—	$ —	—	$ —	37,502,358	$ 2	—	$ —	$ 219,056	$ (112,506)	$ —	$ 106,552
Exercise of stock options	—	—	—	—	—	—	—	—	264,297	—	—	—	164	—	—	164
Net loss	—	—	—	—	—	—	—	—	—	—	—	—	—	(17,495)	—	(17,495)
Other comprehensive loss	—	—	—	—	—	—	—	—	—	—	—	—	—	—	(92)	(92)
Stock-based compensation	—	—	—	—	—	—	—	—	—	—	—	—	1,721	—	—	1,721
Balance at June 30, 2022	—	$ —	—	$ —	—	$ —	—	$ —	37,766,655	$ 2	—	$ —	$ 220,941	$ (130,001)	$ (92)	$ 90,850
Exercise of stock options	—	—	—	—	—	—	—	—	63,102	—	—	—	40	—	—	40
Exercise of stock warrant	—	—	—	—	—	—	—	—	118,096	—	—	—	—	—	—	—
Net loss	—	—	—	—	—	—	—	—	—	—	—	—	—	(17,872)	—	(17,872)
Other comprehensive income	—	—	—	—	—	—	—	—	—	—	—	—	—	—	26	26
Stock-based compensation	—	—	—	—	—	—	—	—	—	—	—	—	2,044	—	—	2,044
Balance at September 30, 2022	—	$ —	—	$ —	—	$ —	—	$ —	37,947,853	$ 2	—	$ —	$ 223,025	$ (147,873)	$ (66)	$ 75,088

See accompanying notes to consolidated financial statements.

AKOYA BIOSCIENCES, INC. AND SUBSIDIARY
CONSOLIDATED STATEMENTS OF REDEEMABLE CONVERTIBLE PREFERRED STOCK AND STOCKHOLDERS’ EQUITY (DEFICIT) (Unaudited)
(in thousands, except share data)

	Series B Redeemable Convertible Preferred Stock		Series C Redeemable Convertible Preferred Stock		Series D Redeemable Convertible Preferred Stock		Series A Convertible Preferred Stock		Class A Common Stock		Class B Common Stock		Additional Paid in Capital	Accumulated Deficit	Total Stockholders equity (defici
	Shares	Amount	Shares	Amount	Shares	Amount	Shares	Amount	Shares	Amount	Shares	Amount			
Balance at December 31, 2020	**13,715,330**	**$ 11,500**	**26,732,361**	**$ 30,107**	**16,390,217**	**$ 27,500**	**5,013,333**	**$ 1,253**	**—**	**$ —**	**2,563,765**	**$ 1**	**$ —**	**$ (52,280)**	**$ (51,02**
Exercise of stock options	—	—	—	—	—	—	—	—	—	—	271,334	—	44	—	4
Accrued dividends	—	180	—	510	—	500	—	—	—	—	—	—	(298)	(892)	(1,19
Net loss	—	—	—	—	—	—	—	—	—	—	—	—	—	(8,082)	(8,08
Stock-based compensation	—	—	—	—	—	—	—	—	—	—	—	—	254	—	25
Balance at March 31, 2021	**13,715,330**	**$ 11,680**	**26,732,361**	**$ 30,617**	**16,390,217**	**$ 28,000**	**5,013,333**	**$ 1,253**	**—**	**$ —**	**2,835,099**	**$ 1**	**$ —**	**$ (61,254)**	**$ (60,00**
Conversion of Class B shares	—	—	—	—	—	—	—	—	2,835,099	1	(2,835,099)	(1)	—	—	—
Exercise of stock options	—	—	—	—	—	—	—	—	189,175	—	—	—	99	—	9
Accrued dividends	—	37	—	105	—	103	—	—	—	—	—	—	(245)	—	(24
Initial public offering of common stock	—	—	—	—	—	—	—	—	7,567,000	—	—	—	138,553	—	138,55
Conversion of preferred stock into common stock in connection with the IPO	(13,715,330)	(11,717)	(26,732,361)	(30,722)	(16,390,217)	(28,103)	(5,013,333)	(1,253)	26,545,579	1	—	—	71,794	—	70,54
Reclassification of warrant liability to equity	—	—	—	—	—	—	—	—	—	—	—	—	3,219	—	3,21
Net loss	—	—	—	—	—	—	—	—	—	—	—	—	—	(5,563)	(5,56
Stock-based compensation	—	—	—	—	—	—	—	—	—	—	—	—	1,216	—	1,21
Balance at June 30, 2021	**—**	**$ —**	**—**	**$ —**	**—**	**$ —**	**—**	**$ —**	**37,136,853**	**$ 2**	**—**	**$ —**	**$ 214,636**	**$ (66,817)**	**$ 147,82**
Exercise of stock options	—	—	—	—	—	—	—	—	40,518	—	—	—	30	—	3
Net loss	—	—	—	—	—	—	—	—	—	—	—	—	—	(11,617)	(11,61
Stock-based compensation	—	—	—	—	—	—	—	—	—	—	—	—	1,158	—	1,15
Balance at September 30, 2021	**—**	**$ —**	**—**	**$ —**	**—**	**$ —**	**—**	**$ —**	**37,177,371**	**$ 2**	**—**	**$ —**	**$ 215,824**	**$ (78,434)**	**$ 137,39**

See accompanying notes to consolidated financial statements.

AKOYA BIOSCIENCES, INC. AND SUBSIDIARY
CONSOLIDATED STATEMENTS OF CASH FLOWS (Unaudited)
(in thousands)

	Nine months ended	
	September 30, 2022	September 30, 2021
Operating activities		
Net loss	$ (51,766)	$ (25,262)
Adjustments to reconcile net loss to net cash used in operating activities:		
Depreciation and amortization	5,248	3,418
Non-cash interest expense	381	319
Stock-based compensation expense	5,310	2,628
Deferred taxes	99	(36)
Change in fair value of contingent consideration	(599)	1,050
Net accretion of marketable securities	(160)	—
Change in fair value of warrant liability	—	2,728
Loss on sale of property and equipment	82	—
Gain on extinguishment of debt	—	(2,476)
Changes in operating assets and liabilities:		
Accounts receivable, net	764	(3,135)
Prepaid expenses and other assets	(255)	(9,017)
Inventories, net	(3,976)	(2,272)
Accounts payable	(1,263)	(1,003)
Accrued expenses and other liabilities	1,107	2,206
Deferred revenue	1,539	638
Net cash used in operating activities	(43,489)	(30,214)
Investing activities		
Purchases of property and equipment	(6,491)	(3,729)
Proceeds from sale of property and equipment	55	—
Purchase of marketable securities	(40,774)	—
Maturities of marketable securities	11,000	—
Net cash used in investing activities	(36,210)	(3,729)
Financing activities		
Proceeds from initial public offering, net of underwriting discounts and commissions	—	138,553
Proceeds from stock option exercises	259	173
Proceeds from debt	20,000	—
Payments of debt issuance costs	(138)	—
Principal payments on capital leases	—	(250)
Principal payments on financing leases	(458)	—
Payments of contingent consideration	(1,207)	(1,590)
Net cash provided by financing activities	18,456	136,886
Net (decrease) increase in cash, cash equivalents, and restricted cash	(61,243)	102,943
Cash, cash equivalents, and restricted cash at beginning of period	113,381	17,508
Cash, cash equivalents, and restricted cash at end of period	$ 52,138	$ 120,451
Supplemental disclosures of cash flow information		
Cash paid for interest	$ 2,189	$ 1,942
Cash paid for income taxes	$ —	$ —
Supplemental disclosures of non-cash activities		
Purchases of property and equipment included in accounts payable and accrued expenses	$ 352	$ 438
Accretion of dividends on Series B, C, and D Preferred Stock	$ —	$ 1,435
Conversion of convertible preferred stock into common stock upon completion of initial public offering	$ —	$ 71,795
Reclassification of warrant liability to equity	$ —	$ 3,219

See accompanying notes to consolidated financial statements.

AKOYA BIOSCIENCES, INC. AND SUBSIDIARY

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(Amounts in thousands, except share and per share data)

(1) The company and basis of presentation

Description of business

Akoya Biosciences, Inc. (“Akoya” or the “Company”) is a life sciences technology company, founded on November 13, 2015 as a Delaware corporation with operations based in Marlborough, Massachusetts and Menlo Park, California, delivering spatial biology solutions focused on transforming discovery and clinical research. Spatial biology refers to an evolving technology that enables academic and biopharma scientists to detect and map the distribution of cell types and biomarkers across whole tissue samples at single cell resolution, enabling advancements in their understanding of disease progression and patient response to therapy. Through Akoya’s PhenoCycler™ (formerly CODEX®) and PhenoImager™ (formerly Phenoptics™) platforms, reagents, software and services, the Company offers end-to-end solutions to perform tissue analysis and spatial phenotyping across the full continuum, from discovery through translational and clinical research.

On September 28, 2018, the Company acquired the commercial QPS division of PerkinElmer, Inc. (“PKI”) for multiplex immunofluorescence, with the aim of providing consumers with a full suite of end-to-end solutions for high parameter tissue analysis. The QPS technology offers pathology solutions for cancer immunology and immunotherapy research, including advanced multiplex immunochemistry staining kits, multispectral imaging and whole side scanning instruments, and image analysis software. The Company’s combined portfolio of complementary technologies aims to fuel groundbreaking advancements in cancer immunology, immunotherapy, neurology and a wide range of other applications. The Company sells into three main regions across the world: North America, Asia-Pacific (“APAC”), and Europe-Middle East-Africa (“EMEA”).

On April 8, 2021, the Board of Directors of the Company (the “Board”) approved a 1-for-2.33 reverse stock split of its issued and outstanding common stock and a proportional adjustment to the existing conversion ratios for each series of the Company’s convertible preferred stock, which was effected on April 9, 2021. The par value of the authorized stock was not adjusted as a result of the reverse stock split. Other than the par value, all issued and outstanding shares of common stock and related per share data shown in the accompanying financial statements and related notes have been retroactively revised to reflect the reverse stock split and adjustment of the Preferred Stock conversion ratios.

In April 2021, the Company completed the initial public offering of its common stock (the “IPO”). In the IPO, the Company issued and sold 7,567,000 shares of its common stock at a price to the public of $20.00 per share, including the exercise by the underwriters of their option to purchase an additional 987,000 shares. The Company received $138.6 million in net proceeds, after deducting underwriting discounts and commissions and other offering expenses.

Immediately prior to completing the IPO, all preferred stock converted into 26,545,579 shares of common stock, and all outstanding shares of the Company’s Class B common stock converted on a 1 for 1 basis into 2,835,099 shares of the Company’s Class A common stock.

On April 20, 2021, in connection with the closing of the IPO, the Company’s amended and restated certificate of incorporation, as filed with the Secretary of State of the State of Delaware, and the Company’s amended and restated bylaws became effective. Refer to Note 9 for further details.

Principles of consolidation

The Company’s financial statements have been prepared in conformity with accounting principles generally accepted in the United States of America (“GAAP”). Any reference in these notes to applicable guidance is meant to refer to the authoritative United States generally accepted accounting principles as found in the Accounting Standards Codification (“ASC”) and Accounting Standards Updates (“ASU”) of the Financial Accounting Standards Board

("FASB"). The Company's consolidated financial statements include the accounts of the Company and its wholly-owned subsidiary, Akoya Biosciences UK Ltd. ("Akoya UK"). All intercompany balances and transactions have been eliminated in consolidation.

Unaudited interim financial information

The accompanying consolidated balance sheet as of September 30, 2022, the consolidated statements of operations, the consolidated statements of comprehensive loss, and the consolidated statements of redeemable convertible preferred stock and stockholders' equity (deficit) for the three and nine months ended September 30, 2022 and 2021, and the consolidated statements of cash flows for the nine months ended September 30, 2022 and 2021 are unaudited. The unaudited interim consolidated financial statements have been prepared on the same basis as the audited annual consolidated financial statements and, in the opinion of management, reflect all adjustments, which include only normal recurring adjustments, necessary for the fair statement of the Company's financial position as of September 30, 2022, the results of its operations for the three and nine months ended September 30, 2022 and 2021, and cash flows for the nine months ended September 30, 2022 and 2021. The financial data and other information disclosed in these notes related to the three and nine months ended September 30, 2022 and 2021 are also unaudited. The results for the three and nine months ended September 30, 2022 are not necessarily indicative of results to be expected for the year ending December 31, 2022, any other interim periods, or any future year or period. The consolidated balance sheet as of December 31, 2021 included herein was derived from the audited consolidated financial statements as of that date. These unaudited consolidated financial statements should be read in conjunction with the Company's audited consolidated financial statements and the notes thereto for the year ended December 31, 2021 included in the Annual Report on Form 10-K filed with the SEC on March 15, 2022.

Liquidity and going concern

At September 30, 2022, the Company had cash, cash equivalents, and marketable securities of $81,704 and an accumulated deficit of $147,873. The future success of the Company is dependent on its ability to successfully commercialize its products, successfully launch future products, obtain additional capital and ultimately attain profitable operations. The Company has funded its operations primarily through its preferred stock issuances, debt financing arrangements, and the IPO.

The Company is subject to a number of risks similar to other newly commercial life sciences companies, including, but not limited to, development and market acceptance of the Company's product candidates, development by its competitors of new technological innovations, protection of proprietary technology, and raising additional capital.

The Company has incurred losses since its inception and has used cash from operations of $43,489 during the nine months ended September 30, 2022. However, the Company believes that its existing cash, cash equivalents, and marketable securities will be adequate to satisfy our current operating plans for at least the next twelve months from the issuance of these financial statements.

The accompanying consolidated financial statements have been prepared on a going concern basis, which contemplates the realization of assets and satisfaction of liabilities in the ordinary course of business. The financial statements do not include any adjustments relating to the recoverability and classification of recorded asset amounts or the amounts and classification of liabilities that might result from the outcome of the uncertainties described above.

(2) Summary of significant accounting policies

Significant accounting policies

The Company's significant accounting policies are disclosed in its Annual Report on Form 10-K for the year ended December 31, 2021 filed with the Securities and Exchange Commission (the "Commission") and have not materially changed during the nine months ended September 30, 2022, with the exception of the adoption of the FASB's ASU 2016-02, *Leases* (Topic 842) in the first quarter of 2022. Refer below to "Recently adopted accounting standards" for further information.

Revenue recognition

The Company follows ASC 606, *Revenue from Contracts with Customers* ("ASC 606").

The Company generates revenue from the sale and installation of instruments, related warranty services, reagents and software (both company-owned and with third parties). Pursuant to ASC 606, revenue is recognized when a customer obtains control of promised goods or services. The amount of revenue recognized reflects the consideration the Company expects to be entitled to receive in exchange for these goods and services.

To determine the appropriate amount of revenue to be recognized for arrangements determined to be within the scope of Topic 606, the Company performs the following five steps: (i) identification of the customer contract; (ii) identification of the performance obligations; (iii) measurement of the transaction price, including the constraint on variable consideration; (iv) allocation of the transaction price to the performance obligations; and (v) recognition of revenue when (or as) the Company satisfies each performance obligation. The Company only applies the five-step model to contracts when it is probable that the Company will collect consideration it is entitled to in exchange for the goods or services it transfers to the customer.

The Company evaluates all promised goods and services within a customer contract and determines which of those are separate performance obligations. This evaluation includes an assessment of whether the good or service is capable of being distinct and whether the good or service is separable from other promises in the contract. Promised goods or services are considered distinct when (i) the customer can benefit from the good or service on its own or together with other readily available resources and (ii) the promised good or service is separately identifiable from other promises in the contract.

Most of the Company's contracts with customers contain multiple performance obligations (i.e., sale of an instrument and warranty services). For these contracts, the Company accounts for individual performance obligations separately if they are distinct (i.e. capable of being distinct and separable from other promises in the contract). The transaction price is allocated to the separate performance obligations on a relative standalone selling price basis. Excluded from the transaction price are sales tax and other similar taxes which are presented on a net basis.

Product Revenue

Product revenue is generated by the sale of instruments and consumable reagents predominantly through the Company's direct sales force in the United States and in geographic regions outside the United States such as APAC and EMEA. The Company does not offer product return or exchange rights (other than those relating to defective goods under warranty) or price protection allowances to its customers. When an instrument is purchased by a customer, the Company recognizes revenue when the related performance obligation is satisfied (i.e. when the control of an instrument has passed to the customer). Revenue from the sale of consumables is recognized upon shipment to the customer. The Company's perpetual software licenses generally have significant stand-alone functionality to the customer upon delivery and are considered to be functional intellectual property. The Company's perpetual software licenses are considered distinct performance obligations, and revenue allocated to the software license is typically recognized upon provision of the license/software code to the customer (i.e., when the software is available for access and download by the customer).

Service and Other Revenue

Product sales of instruments include a service-based warranty typically for one year following the installation of the purchased instrument, with an extended warranty for an additional year sold in many cases. These are separate performance obligations as they are service-based warranties and are recognized on a straight-line basis over the service delivery period. After completion of the service period, customers have an option to renew or extend the warranty services, typically for additional one-year periods in exchange for additional consideration. The extended warranties are also service-based warranties that represent separate purchasing decisions. The Company recognizes revenue allocated to the extended warranty performance obligation on a straight-line basis over the service delivery period. Revenue from separately charged installation services is recognized upon completion of the installation process. Additionally, the Company provides laboratory services, in which revenue is recognized as services are performed. For laboratory services, the Company generally uses the cost-to-cost approach to measure the extent of progress towards completion of the performance obligation because the Company believes it best depicts the transfer of assets to the customer. Under the cost-to-cost measure approach, the extent of progress towards completion is measured based on the ratio of costs incurred to date to the total estimated costs at completion of the performance obligation. Revenues are recorded proportionally as costs are incurred. The Company records shipping and handling billed to customers as service and other revenue and the related costs in cost of service and other revenue in the consolidated statements of operations.

In June 2022, the Company entered into a Companion Diagnostic Agreement with Acrivon Therapeutics, Inc. (the “Acrivon Agreement”) to co-develop, validate, and commercialize Acrivon’s OncoSignature® test. The Company will be paid through an upfront payment and at the achievement of certain developmental, commercial, and FDA milestones during the development, that could aggregate to low double digit million dollars.

The Acrivon Agreement is in the scope of ASC 606, *Revenue from Contracts with Customers* and includes one performance obligation since the underlying elements are inputs to a single development service and are not distinct within the context of the contract. Accordingly, the Company will recognize revenue over time for the transaction price in an amount proportional to the expenses incurred and the total estimated expenses to satisfy its performance obligation. Due to the uncertainty in the achievement of certain developmental, commercial, and FDA milestones, the variable consideration associated with certain future milestone payments has been fully constrained from the transaction price until such time that the Company concludes that it is probable that a significant reversal of previously recognized revenue will not occur.

The costs incurred by the Company under this arrangement are included as research and development expenses in the Company’s Consolidated Statements of Operations as these costs are related to the development of new services and technology to be owned and offered by the Company.

Disaggregation of Revenue

The Company disaggregates revenue from contracts with customers by type of products, and between service and other revenue, as it best depicts how the nature, amount, timing and uncertainty of revenue and cash flows are affected by economic factors. The following table disaggregates the Company’s revenue by major source:

	Three months ended		Nine months ended	
	September 30, 2022	September 30, 2021	September 30, 2022	September 30, 2021
Revenue				
Product revenue				
Instruments	$ 9,514	$ 7,099	$ 27,498	$ 20,195
Consumables	4,724	3,430	13,847	10,283
Standalone software products	200	345	597	1,078
Total product revenue	$ 14,438	$ 10,874	$ 41,942	$ 31,556
Service and other revenue	$ 4,414	$ 2,602	$ 11,698	$ 7,203
Total revenue	$ 18,852	$ 13,476	$ 53,640	$ 38,759

Significant Judgments

The Company's contracts with customers often include promises to transfer multiple products and services to a customer. Determining whether products and services are considered distinct performance obligations that should be accounted for separately versus together requires significant judgment. Once the Company determines the performance obligations, the Company determines the transaction price, which includes estimating the amount of variable consideration, based on the most likely amount, to be included in the transaction price, if any. The Company then allocates the transaction price to each performance obligation in the contract based on a relative standalone selling price method. The corresponding revenue is recognized as the related performance obligations are satisfied as discussed in the revenue categories above.

Judgment is required to determine the standalone selling price for each distinct performance obligation. The Company determines standalone selling price based on the price at which the performance obligation in the contract (i.e. instrument, service warranty, installation) would be sold separately. As the first-year warranty for each instrument is embedded in the instrument price, the amount allocated to the first-year warranty has been determined based on the separately identifiable price of the Company's extended warranty offering when it is sold on a renewal basis.

If the standalone selling price is not observable through past transactions, the Company estimates the standalone selling price taking into account available information such as market conditions and the expected costs and margin related to the performance obligations. Contracts in which only one performance obligation is identified (i.e., consumables and standalone software products) do not require allocation of the transaction price.

Contract Assets and Liabilities

The Company did not record any contract assets at September 30, 2022 or December 31, 2021.

The Company's contract liabilities consist of upfront payments for service-based warranties on instrument sales. The Company classifies these contract liabilities in deferred revenue as current or noncurrent based on the timing of when the Company expects to service the warranty.

Cost to Obtain and Fulfill a Contract

Under ASC 606, the Company is required to capitalize certain costs to obtain customer contracts and costs to fulfill customer contracts. These costs are required to be amortized to expense on a systemic basis that is consistent with the transfer to the customer of the goods or services to which the asset relates, compared to previously being expensed as incurred. As a practical expedient, the Company recognizes any incremental costs to obtain a contract as an expense when incurred if the amortization period of the asset is one year or less. Capitalizable costs to obtain contracts, such as commissions, and costs to fulfill customer contracts were determined to be immaterial for the nine months ended September 30, 2022 and 2021.

Stock-based compensation

The Company records stock-based compensation for awards granted to employees, non-employees, and to members of the Board for their services on the Board based on the grant date fair value of awards issued, and the expense is recorded on a straight-line basis over the requisite service period, which is generally four years.

The Company uses the Black-Scholes-Merton option pricing model to determine the fair value of stock options. The use of the Black-Scholes-Merton option-pricing model requires management to make assumptions with respect to the expected term of the option, the expected volatility of the common stock consistent with the expected life of the option, risk-free interest rates and expected dividend yields of the common stock. The expected term was determined according to the simplified method, which is the average of the vesting tranche dates and the contractual term. Due to the lack of company-specific historical and implied volatility, the Company bases its estimate of expected volatility on the historical volatility of a group of similar companies that are publicly traded. For these analyses, companies with comparable characteristics are selected, including enterprise value and position within the industry, and with historical price information sufficient to meet the expected life of the stock-based awards. The Company computes the historical volatility data using the daily closing prices for the selected companies' shares during the equivalent period of the calculated expected term of its stock-based awards. The risk-free interest rate is determined by reference to the U.S. Treasury zero-coupon issues with remaining maturities similar to the expected term of the options. The Company has not paid, and does not anticipate paying, cash dividends on shares of common stock; therefore, the expected dividend yield is assumed to be zero.

For restricted stock units ("RSUs") issued under the Company's stock-based compensation plans, the fair value of each grant is calculated based on the Company's stock price on the date of grant.

The Company has elected to account for forfeitures as they occur; any compensation cost previously recognized for an award that is forfeited because of a failure to satisfy a service or performance condition will be reversed in the period of the forfeiture.

Refer to Note 10 for further details on the Company's stock-based compensation plans.

Net loss per share attributable to common stockholders

Basic and diluted net loss per common share outstanding is determined by dividing net loss, as adjusted for accretion and accrued dividends on redeemable convertible preferred stock, by the weighted average common shares outstanding during the period. Diluted net loss per share reflects the potential dilution that would occur if securities or other contracts to issue common stock were exercised or converted into common stock; however, potential common equivalent shares are excluded if their effect is anti-dilutive. In computing diluted net loss per share, the Company utilizes the treasury stock method.

The Company applies the two-class method to compute basic and diluted net loss or income per share when it has issued shares that meet the definition of participating securities. The two-class method determines net (loss) or income per share for each class of common and participating securities according to dividends declared or accumulated and participation rights in undistributed earnings. The two-class method requires net (loss) income available to common stockholders for the period to be allocated between common and participating securities based upon their respective rights to share in the earnings as if all net (loss) income for the period had been distributed. The Company's convertible preferred stock participates in any dividends declared by the Company and are therefore considered to be participating securities. The participating securities are not required to participate in the losses of the Company, and therefore during periods of loss there is no allocation required under the two-class method.

Comprehensive loss

Components of comprehensive loss, including net loss, are reported in the financial statements in the period in which they are recognized. Other comprehensive income or loss is defined as the change in equity during a period from transactions and other events and circumstances from non-owner sources. Net loss and other comprehensive loss are reported net of any related tax effect to arrive at comprehensive loss. Comprehensive loss includes net loss as well as other changes in stockholders' equity that result from transactions and economic events other than those with stockholders which for the three and nine months ended September 30, 2022 consist of unrealized loss on marketable securities.

Marketable securities

Marketable securities represent holdings of available-for-sale marketable debt securities in accordance with the Company's investment policy. Short-term marketable securities mature within one year from the balance sheet date while long-term marketable securities mature after one year. Investments in marketable securities are recorded at fair value, with any unrealized gains and losses reported within accumulated other comprehensive income as a separate component of stockholders' equity until realized or until a determination is made that an other-than-temporary decline in market value has occurred. The amortized cost of debt securities is adjusted for amortization of premiums and accretion of discounts to maturity. Such amortization and accretion are reflected as a component of other expense. Interest on securities sold is determined based on the specific identification method and reflected as interest income. Any realized gains or losses on the sale of investment are reflected as realized (loss) gain on investments.

Recent Accounting Standards

From time to time, new accounting pronouncements are issued by the FASB or other standard setting bodies and adopted by the Company as of the specified effective date. The Company is considered to be an "emerging growth company" as defined in the Jumpstart Our Business Startups Act of 2012, as amended (Jobs Act). The Jobs Act provides that an emerging growth company can take advantage of an extended transition period for complying with new or revised accounting standards. Thus, an emerging growth company can delay the adoption of certain accounting standards until those standards would otherwise apply to private companies. The Company has elected to avail itself of this extended transition period and, as a result, the Company will not be required to adopt new or revised accounting standards on the relevant dates on which adoption of such standards is required for other public companies.

Recently adopted accounting standards

In February 2016, the FASB issued ASU 2016-02, *Leases* (Topic 842) in order to increase transparency and comparability among organizations by recognizing lease assets and lease liabilities on the balance sheet for those leases classified as operating leases under previous generally accepted accounting principles. ASU 2016-02 requires a lessee to recognize a liability to make lease payments (the lease liability) and a right-of-use asset representing its right to use the underlying asset for the lease term on the balance sheet. In August 2018, the FASB issued ASU 2018-11, *Targeted Improvements to ASC 842*, which provides a new transition option in which an entity initially applies ASU 2016-02 at the adoption date and recognizes a cumulative-effect adjustment to the opening balance of retained earnings in the period of adoption.

On January 1, 2022, the Company adopted ASU No. 2016-02, *Leases* (Topic 842), (ASC 842), using the optional transition method allowing entities to recognize a cumulative effect adjustment to the opening balance sheet without restating comparative prior periods presented. ASC 842 requires a lessee to recognize assets and liabilities on the balance sheet for most leases and changes many key definitions, including the definition of a lease. Lessees will continue to differentiate between finance leases and operating, and classification will impact expense recognition.

The Company elected the following practical expedients for all lease asset classes, which must be elected as a package and applied consistently to all of its leases at the transition date: i) the Company did not reassess whether any expired or existing contracts are or contain leases; ii) the Company did not reassess the lease classification for any expired or existing leases; and iii) the Company did not reassess initial direct costs for any existing leases. Refer to Note 17 "Leases" for the adoption impact to our consolidated balance sheet.

Recently issued but not yet adopted accounting standards

In June 2016, the FASB issued ASU No. 2016-13, *Financial Instruments — Credit Losses (Topic 326) — Measurement of Credit Losses on Financial Instruments*, which has been subsequently amended by ASU No. 2018-19, ASU No. 2019-04, ASU No. 2019-05, ASU No. 2019-10, ASU No. 2019-11 and ASU No. 2020-03 ("ASU 2016-13"). The provisions of ASU 2016-13 modify the impairment model to utilize an expected loss methodology in place of the currently used incurred loss methodology and require a consideration of a broader range of reasonable and supportable information to inform credit loss estimates. ASU 2016-13 is effective for the Company on January 1, 2023, with early adoption permitted. The Company is currently evaluating the potential impact that ASU 2016-13 may have on its consolidated financial statements and related disclosures.

In January 2017, the FASB issued ASU No. 2017-04, *Intangibles-Goodwill and Other (Topic 350): Simplifying the Test for Goodwill Impairment*, which simplifies the subsequent measurement of goodwill by eliminating Step 2 from the goodwill impairment test. Instead of determining a hypothetical purchase price allocation to measure goodwill impairment, the Company will compare the fair value of a reporting unit with its carrying amount. The update also includes a new requirement to disclose the amount of goodwill allocated to reporting units with zero or negative carrying amounts. ASU 2017-04 is effective for the Company on January 1, 2023, with early adoption permitted. The Company is currently evaluating the potential impact that ASU 2017-04 may have on its consolidated financial statements and related disclosures.

(3) Significant risks and uncertainties including business and credit concentrations

Financial instruments that potentially subject the Company to concentrations of credit risk consist primarily of cash equivalents, marketable securities, and receivables. The Company's cash equivalents are held by large, credit worthy financial institutions. Marketable securities consist of short-term investments. The Company has established guidelines relative to credit ratings, diversification and maturities that seek to maintain safety and liquidity. Deposits in these banks may exceed the amounts of insurance provided on such deposits. To date, the Company has not experienced any losses on its deposits of cash and cash equivalents.

The Company controls credit risk through credit approvals, credit limits, and monitoring procedures. The Company performs periodic credit evaluations of its customers and generally does not require collateral. Accounts receivable are recorded net of an allowance for doubtful accounts. The allowance for doubtful accounts is based on management's assessment of the collectability of specific customer accounts and the aging of the related invoices and represents the Company's best estimate of probable credit losses in its existing accounts receivable. The Company had an allowance for doubtful accounts of $45 and $45 at September 30, 2022 and December 31, 2021, respectively.

For the three months ended September 30, 2022, no customers accounted for more than 10% of revenue. For the nine months ended September 30, 2022, no customers accounted for more than 10% of revenue. For the three months ended September 30, 2021, one customer accounted for 11% of revenue. For the nine months ended September 30, 2021, one customer accounted for 10% of revenue. As of September 30, 2022, no customers accounted for more than 10% of accounts receivable. As of December 31, 2021, no customers accounted for more than 10% of accounts receivable.

(4) Fair value of financial instruments

The Company measures the following financial liabilities at fair value on a recurring basis. There were no transfers between levels of the fair value hierarchy during any of the periods presented.

The following tables set forth the Company's financial assets and liabilities carried at fair value categorized using the lowest level of input applicable to each financial instrument as of September 30, 2022 and December 31, 2021:

	Balance at September 30, 2022	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Assets:				
Cash and cash equivalents	$ 51,836	$ 51,578	$ 258	$ —
U.S. Treasury securities	29,868	—	29,868	—
Total Assets	$ 81,704	$ 51,578	$ 30,126	$ —
Liabilities:				
Contingent consideration – Long term portion	$ 5,956	$ —	$ —	$ 5,956
Total Liabilities	$ 5,956	$ —	$ —	$ 5,956

	Balance at December 31, 2021	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Liabilities:				
Contingent consideration – Long term portion	$ 7,850	$ —	$ —	$ 7,850
Total Liabilities	$ 7,850	$ —	$ —	$ 7,850

The following is a summary of cash, cash equivalents and marketable securities:

	September 30, 2022			
	Cost	Gross Unrealized Gains	Gross Unrealized Losses	Estimated Fair Value
Cash and cash equivalents	$ 51,836	$ —	$ —	$ 51,836
Marketable securities:				
U.S. Treasury securities due in one year or less	29,934	—	(66)	29,868
Total marketable securities	29,934	—	(66)	29,868
Total cash, cash equivalents, and marketable securities	$ 81,770	$ —	$ (66)	$ 81,704

The Company held 12 debt securities at September 30, 2022 classified as marketable securities with original maturity dates greater than three months that were in an unrealized loss position for less than twelve months. The fair value of these securities was $29,868. The Company evaluated its securities for other-than-temporary impairments based on quantitative and qualitative factors. The Company considered the decline in market value for these securities to be primarily attributable to current economic and market conditions. It is not more likely than not that the Company will be required to sell these securities, and the Company does not intend to sell these securities before the recovery of their amortized cost basis. Based on its analysis, the Company does not consider these investments to be other-than-temporarily impaired as of September 30, 2022.

The Company had no material realized gains or losses on our available-for-sale securities for the three and nine months ended September 30, 2022. There were no other-than-temporary impairments recognized for the three and nine months ended September 30, 2022.

The Company's recurring fair value measurements using Level 3 inputs relate to the Company's contingent consideration liability and warrant liability. In those circumstances where an acquisition involves a contingent consideration arrangement, the Company recognizes a liability equal to the fair value of the contingent payments the Company expects to make as of the acquisition date. The Company re-measures this liability each reporting period and records changes in the fair value through changes in fair value of contingent consideration on the Company's consolidated statements of operations. Increases or decreases in the fair value of the contingent consideration liability can result from changes in discount rates, periods, timing and amount of projected revenue.

In September 2019, the Company entered into a Loan and Security Agreement with Innovatus Life Sciences Lending Fund I, LP ("Innovatus"), under which Innovatus agreed to make a term loan to the Company in an aggregate principal amount of $25,000 (the "Innovatus Term Loan"). In connection with the Loan and Security Agreement, the Company also issued the lender a warrant to purchase 368,779 additional shares of Series D Preferred Stock, at a purchase price of $1.53 per share. The expiration date of the warrant is September 27, 2029. The holder may at any time and from time to time exercise this warrant, in whole or in part, and on any exercise of the warrant, the holder may elect to receive shares equal to the full value of the warrant or a portion of its full value. Prior to the IPO, since the underlying Series D redeemable convertible preferred stock was classified outside of permanent equity, the preferred stock warrant was classified as other long-term liabilities in the accompanying balance sheet. The preferred stock warrant liability was recorded at fair value utilizing the Black-Scholes model. The Black Scholes option pricing model is based on the estimated market value of the underlying redeemable convertible preferred stock at the valuation measurement date, the remaining contractual term of the warrant, risk-free interest rates, expected dividends, and expected volatility of the price of the underlying redeemable convertible preferred stock. The Company adjusted the carrying value of the preferred stock warrant to its estimated fair value at each reporting date, with any related increase or decrease in the fair value recorded as an increase or decrease to other income (expense) in the statements of operations. In connection with the IPO, the preferred stock warrant was converted to a warrant to purchase shares of the Company's common stock, pursuant to its preexisting terms. As such, the Company assessed the classification of the common stock warrant and determined it met the criteria to be classified within stockholders' equity. Accordingly, the fair value of the warrant liability was reclassified to stockholders' equity. In the third quarter of 2022, Innovatus exercised its warrant to purchase the Company's common stock.

Changes in the fair value of the Company's long-term portion of the contingent consideration liability during the nine months ended September 30, 2022 and 2021 were as follows:

Balance as of December 31, 2021	$ 7,850
Reclassification of FY 2022 payment to accrued expenses	(1,295)
Change in contingent consideration value	(599)
Balance as of September 30, 2022	$ 5,956
Balance as of December 31, 2020	$ 6,984
Reclassification of FY 2021 payment to accrued expenses	(1,210)
Change in contingent consideration value	1,050
Balance as of September 30, 2021	$ 6,824

The recurring Level 3 fair value measurements of the Company's contingent consideration liability include the following significant unobservable inputs:

Contingent Consideration Liability	Fair Value as of September 30, 2022	Valuation Technique	Unobservable Inputs
Revenue-based Payments	$ 5,956	Discounted Cash Flow Analysis under the Income Approach	Revenue discount factor, discount rate

Changes in the fair value of the Company's warrant liability during the nine months ended September 30, 2021 were as follows:

Balance as of December 31, 2020	$ 490
Change in fair value of warrant liability	2,728
Reclassification of warrant liability to stockholders' equity	(3,218)
Balance as of September 30, 2021	$ —

(5) Property and equipment, net

Property and equipment consists of the following:

	Estimated Useful Life (Years)	September 30, 2022	December 31, 2021
Furniture and fixtures	7	$ 494	$ 488
Computers, laptop and peripherals	5	4,574	3,590
Laboratory equipment	5	7,056	5,906
Leasehold improvements	Shorter of the lease life or 7	3,937	1,571
Total property and equipment		16,061	11,555
Less: Accumulated depreciation		(5,569)	(4,068)
Property and equipment, net		$ 10,492	$ 7,487

Depreciation expense of $699 and $1,681 relating to property and equipment was charged to operations for the three and nine months ended September 30, 2022, respectively. Depreciation expense of $462 and $1,277 relating to property and equipment was charged to operations for the three and nine months ended September 30, 2021, respectively. Depreciation expense of $38 and $168 relating to property and equipment was charged to cost of sales for the three and nine months ended September 30, 2022, respectively. Depreciation expense of $0 relating to property and equipment was charged to cost of sales for the three and nine months ended September 30, 2021.

Demo inventory consists of the following:

	Estimated Life (Years)	September 30, 2022	December 31, 2021
Demo inventory – gross	3	$ 4,179	$ 3,733
Less: Accumulated depreciation		(2,115)	(1,185)
Demo inventory, net		$ 2,064	$ 2,548

Depreciation expense of $314 and $959 relating to demo equipment was charged to operations for the three and nine months ended September 30, 2022, respectively. Depreciation expense of $261 and $513 relating to demo equipment was charged to operations for the three and nine months ended September 30, 2021, respectively.

(6) Intangible assets and goodwill

Intangible assets as of September 30, 2022 are summarized as follows:

	Cost	Accumulated Amortization	Net	Useful Life (in years)
Customer relationships	$ 11,800	$ (3,151)	$ 8,649	15
Developed technology	8,300	(2,771)	5,529	12
Licenses	213	(33)	180	15
Trade names and trademarks	6,300	(2,343)	3,957	12
Capitalized software	2,349	(222)	2,127	5
Non-compete agreements	300	(300)	—	4
Total intangible assets	$ 29,262	$ (8,820)	$ 20,442	

Intangible assets as of December 31, 2021 are summarized as follows:

	Cost	Accumulated Amortization	Net	Useful Life (in years)
Customer relationships	$ 11,800	$ (2,561)	$ 9,239	15
Developed technology	8,300	(2,252)	6,048	12
Licenses	63	(25)	38	15
Trade names and trademarks	6,300	(1,722)	4,578	12
Capitalized software	1,259	(68)	1,191	5
Non-compete agreements	300	(244)	56	4
Total intangible assets	$ 28,022	$ (6,872)	$ 21,150	

Total amortization expense charged to operations for the three and nine months ended September 30, 2022 was $681 and $1,948, respectively. Total amortization expense charged to cost of sales for the three and nine months ended September 30, 2022 was $0. Total amortization expense charged to operations for the three and nine months ended September 30, 2021 was $521 and $1,562, respectively. Total amortization expense charged to cost of sales for the three and nine months ended September 30, 2021 was $0 and $66, respectively.

As of September 30, 2022, the amortization expense related to identifiable intangible assets in future periods is expected to be as follows:

2022 remaining	$ 685
2023	2,772
2024	2,772
2025	2,772
2026	2,737
Thereafter	8,704
Total	$ 20,442

As of September 30, 2022 and December 31, 2021, the goodwill balance is $18,262.

(7) Accrued expenses and other current liabilities

Accrued expenses and other current liabilities consist of the following:

	September 30, 2022	December 31, 2021
Payroll and compensation	$ 6,359	$ 6,502
Current portion of contingent consideration	1,295	1,207
Inventory purchases	86	1,877
Other accrued expenses	6,297	3,905
Total accrued expenses and other current liabilities	$ 14,037	$ 13,491

(8) Debt

Term Loan Agreements

In October 2020, the Company entered into a debt financing arrangement with Midcap Financial Trust (the "Midcap Trust Term Loan"), for a $37,500 credit facility, consisting of a senior, secured term loan. The Company received $32,500 in aggregate proceeds as a result of the debt financing. The term of the Midcap Trust Term Loan is interest only for 36 months followed by 24 months of straight-line amortization. Interest on the outstanding balance of the Midcap Trust Term Loan shall be payable monthly in arrears at an annual rate of one-month LIBOR plus 6.35%, subject to a LIBOR floor of 1.50%. At the time of final payment under the Midcap Trust Term Loan, the Company is required to pay Midcap Financial Trust a final payment fee of 5.00% of the amount borrowed under the Midcap Trust Term Loan. If the Midcap Trust Term Loan is prepaid prior to the end of the term, the Company shall pay to Midcap Financial Trust a fee as compensation for the costs of being prepared to make funds available in an amount determined by multiplying the amount being prepaid by (i) three percent (3.00%) in the first year, two percent, (2.00%) in the second year and one percent (1.00%) in the third year and thereafter.

On March 21, 2022, the Company entered into Amendment No. 1 to the Midcap Trust Term Loan, which amended certain provisions to permit certain additional debt and capital leases.

On June 1, 2022, the Company entered into Amendment No. 2 ("Amendment No. 2") to the Midcap Trust Term Loan, which permitted the draw of a second tranche of $10,000, which was drawn on June 1, 2022. Additionally, the amendment provides the Company with a new third tranche pursuant to which the Company may draw $10,000 any time after September 30, 2022 until September 30, 2023. The amendment also delayed the amortization start dates for the outstanding loan amounts from November 1, 2023 until April 1, 2025, at which point the Company will repay the principal amounts in seven equal monthly installments until the maturity date. Finally, Amendment No. 2 amended the interest rate payable on the term loan to apply an interest rate equal to the Secured Overnight Financing Rate ("SOFR") rate (with a floor of 1.61448%) plus 6.35%. Substantially all other terms and conditions, and covenants of the credit agreement remain unchanged. In connection with Amendment No. 2, the Company agreed to pay a $75 commitment fee as well as a 0.25% fee upon the funding of each of the second tranche and third tranche amounts. The Company accounted for Amendment No. 2 as a modification pursuant to ASC 470-50. On September 30, 2022, the Company drew the third tranche of $10,000 related to Amendment No. 2.

The interest rate was 8.98% at September 30, 2022. A final payment fee of $2,125 is due upon the earlier to occur of the maturity date or prepayment of such borrowings. For the three and nine months ended September 30, 2022, the Company recorded $119 and $292, respectively, related to the amortization of the final payment fee associated with the Midcap Trust Term Loan. For the three and nine months ended September 30, 2021, the Company recorded $82 and $243, respectively, related to the amortization of the final payment fee associated with the Midcap Trust Term Loan.

Debt consists of the following:

	September 30, 2022	December 31, 2021
Midcap Trust Term Loan	$ 52,500	$ 32,500
Unamortized debt discount	(462)	(413)
Accretion of final fee	676	384
Long-term debt, net	$ 52,714	$ 32,471

As of September 30, 2022, future principal payments due under the Midcap Trust Term Loan, excluding the $2,125 final payment fee, are as follows:

Year Ended:	Midcap Trust Term Loan
December 31, 2022	$ —
December 31, 2023	—
December 31, 2024	—
December 31, 2025	52,500
Total minimum principal payments	$ 52,500

(9) Stockholder's equity (deficit)

The Company's Amended and Restated Certificate of Incorporation authorizes it to issue 500,000,000 shares of common stock, $0.00001 par value per share, and 10,000,000 shares of preferred stock, par value $0.00001 per share. Each share of Class A common stock is entitled to one vote. The holders of common stock are also entitled to receive dividends whenever funds are legally available and when declared by the Board, subject to the prior rights of holders of all classes of stock outstanding. As of September 30, 2022 and December 31, 2021, a total of 37,947,853 and 37,424,101 shares of common stock were issued and outstanding, respectively, and 8,174,767 and 6,709,218 shares of common stock were reserved for issuance, respectively.

(10) Stock compensation plans

2021 Equity Incentive Plan

On March 24, 2021, the Board and on April 8, 2021, its stockholders approved and adopted the 2021 Equity Incentive Award Plan (the "2021 Plan"). The 2021 Plan became effective immediately prior to the closing of the IPO. Under the 2021 Plan, the Company may grant stock options, stock appreciation rights, restricted stock, restricted stock units, and other stock or cash-based awards to individuals who are then employees, officers, directors or consultants of the Company. A total of 1,727,953 shares of common stock were approved to be initially reserved for issuance under the 2021 Plan. The number of shares under the Company's 2015 Equity Incentive Plan (the "2015 Plan") subject to outstanding awards as of the effective date of the 2021 Plan that are subsequently canceled, forfeited or repurchased by the Company were added to the shares reserved under the 2021 Plan. In addition, the number of shares of common stock available for issuance under the 2021 Plan will be automatically increased on the first day of each calendar year during the ten-year term of the 2021 Plan, beginning with January 1, 2022 and ending with January 1, 2030, by an amount equal to 5% of the outstanding number of shares of the Company's common stock on December 31st of the preceding calendar year or such lesser amount as determined by the Board.

2015 Equity Incentive Plan

The 2015 Plan was established for granting stock incentive awards to directors, officers, employees and consultants to the Company. The 2015 Plan provided for the grant of incentive and non-qualified stock options, stock appreciation rights, restricted stock and restricted stock units as determined by the Board. Under the 2015 Plan, stock options were generally granted with exercise prices equal to or greater than the fair value of the common stock as determined by the

Board, expired no later than 10 years from the date of grant, and vested over various periods not exceeding four years. While no shares are available for future issuance under the 2015 Plan, it continues to govern outstanding equity awards granted thereunder.

Stock Options

During the nine months ended September 30, 2022 and 2021, the Company granted options with an aggregate fair value of $9,465 and $17,196, respectively, which are being recorded as compensation expense over the requisite service period. The Company uses the Black-Scholes option pricing model to determine the fair value of stock options. The valuation model for stock compensation expense requires the Company to make assumptions and judgments about the variables used in the calculation including the expected term (weighted-average period of time that the options granted are expected to be outstanding), volatility of the Company’s common stock and an assumed-risk-free interest rate.

Expected Volatility. The Company uses an average historical stock price volatility of comparable public companies within a group of similar entities that were deemed to be representative of future stock price trends as the Company does not have sufficient trading history for its common stock. The Company will continue to apply this process until a sufficient amount of historical information regarding volatility of its own stock price options becomes available.

Expected Term. The Company derived the expected term using the “simplified” method (the expected term is determined as the average of the time-to-vesting and the contractual life of the options), as the Company had limited historical information to develop expectations about future exercise patterns and post vesting employment termination behavior.

Risk-Free Interest Rate. The risk-free interest rate is based on U.S. Treasury zero-coupon issues with remaining terms similar to the expected term on the options.

Dividend Yield. The Company has never paid any dividends and does not plan to pay dividends in the foreseeable future, and, therefore, used an expected dividend yield of zero in the valuation model.

During the nine months ended September 30, 2022, the Company granted options to purchase 1,779,228 shares of common stock at a weighted average fair value of $5.32 per share and a weighted average exercise price of $10.61 per share. During the nine months ended September 30, 2021, the Company granted options to purchase 2,228,460 shares of common stock at a weighted average fair value of $7.72 per share and a weighted average exercise price of $15.52 per share. For the three and nine months ended September 30, 2022 and 2021, the fair values were estimated using the Black-Scholes valuation model using the following weighted-average assumptions:

	Three months ended September 30, 2022	Three months ended September 30, 2021	Nine months ended September 30, 2022	Nine months ended September 30, 2021
Weighted-average risk-free interest rate	3.4 %	0.9 %	2.7 %	1.0 %
Expected dividend yield	0 %	0 %	0 %	0 %
Expected volatility	51.6 %	51.1 %	53.3 %	50.5 %
Expected term	6.0 years	6.0 years	6.3 years	6.0 years

Restricted Stock Units

During the nine months ended September 30, 2022, the Company granted RSUs to employees with an aggregate fair value of $3,865, which are being recorded as compensation expense over the requisite service period. The fair value of each grant is calculated based on the Company’s stock price on the date of grant. During the nine months ended September 30, 2022, the Company granted 360,375 shares of restricted common stock at a weighted average fair value of $10.72 per share.

Stock-Based Compensation

Stock-based compensation related to the Company's stock-based awards was recorded as an expense and allocated as follows:

	Three months ended September 30,		Nine months ended September 30,	
	2022	2021	2022	2021
Cost of goods sold	$ 53	$ 36	$ 160	$ 83
Selling, general and administrative	1,643	960	4,246	2,233
Research and development	348	162	904	312
Total stock-based compensation	$ 2,044	$ 1,158	$ 5,310	$ 2,628

As of September 30, 2022, and 2021, there was $18,560 and $14,430, respectively, of total unrecognized compensation cost related to non-vested stock options. The Company expects to recognize that cost over a remaining weighted-average period of 2.9 and 3.4 years as of September 30, 2022 and 2021, respectively.

As of September 30, 2022 there was $3,396 of total unrecognized compensation cost related to non-vested RSUs. The Company expects to recognize that cost over a remaining weighted-average period of 3.6 years as of September 30, 2022.

(11) Employee stock purchase plan

On March 24, 2021, the Board and on April 8, 2021, its stockholders approved and adopted the 2021 Employee Stock Purchase Plan (the "ESPP"). The ESPP became effective in connection with the closing of the Company's IPO. The ESPP permits participants to purchase common stock through payroll deductions of up to 15% of their eligible compensation. A total of 172,795 shares of common stock were approved to be initially reserved for issuance under the ESPP. In addition, the number of shares of common stock available for issuance under the ESPP will be automatically increased on the first day of each calendar year during the first ten-years of the term of the ESPP, beginning with January 1, 2022 and ending with January 1, 2030, by an amount equal to 0.5% of the outstanding number of shares of the Company's common stock on December 31st of the preceding calendar year or such lesser amount as determined by the Board. No shares have been issued under the ESPP at September 30, 2022.

(12) Income taxes

During the three and nine months ended September 30, 2022 and 2021, the Company recorded a tax (provision) benefit of ($21), ($149), $11, and $23, respectively. The tax benefit and provision consist primarily of foreign income taxes and state taxes in the United States. The provision differs from the U.S. federal statutory rate of 21% primarily due to the full valuation allowance recorded against the U.S. deferred tax assets, including the current year to date losses. The Company maintains a valuation allowance against its U.S. deferred tax assets as the Company believes it is more likely than not the deferred tax assets will not be realized.

In response to the COVID-19 pandemic, the Coronavirus Aid, Relief, and Economic Security Act (the "CARES Act") was signed into law on March 27, 2020. The CARES Act included several provisions that provide economic relief for individuals and businesses. The CARES Act, among other things, included tax provisions relating to refundable payroll tax credits, the deferral of employer's social security payments, and modifications to net operating loss carryback provisions. On December 27, 2020, the Consolidated Appropriations Act of 2021 (the "CAA"), which includes the Economic Aid to Hard-Hit Small Businesses, Nonprofits, and Venues Act and the American Rescue Plan Act of 2021, was signed into law and provided further COVID-19 economic relief with an expansion of the employee retention credit. In March 2021, the Internal Revenue Service ("IRS") released Notice 2021-20, which retroactively eliminated the restriction that prevented employers who received a PPP loan from qualifying for the Employee Retention Credit ("ERC"), which is a refundable tax credit against certain employment taxes. Upon determination that the employer has complied with all of the conditions required to receive the credit, a receivable is recognized and the credit reduces salaries and wages. In connection with the CARES Act, the Company adopted a policy to recognize the employee retention credit when earned. For the nine months ended September 30, 2021, we determined that we qualify for the employee retention credit as it relates to wages paid during the twelve months ended December 31, 2020, as well as wages paid during the first, second, and third fiscal quarters of 2021. As a result, we recorded a net benefit of $4,321 related to the employee retention credit as a reduction to payroll expense for the nine months ended September 30, 2021 and recorded a gross receivable of $5,093 within Prepaid expenses and other current assets as of September 30, 2021.

(13) Commitments and contingencies

License Agreements

In September 2018, in connection with the acquisition of the QPS division of PKI, the Company entered into a License Agreement with PKI, pursuant to which PKI granted the Company an exclusive, nontransferable, sublicensable license under certain patent rights to make, use, import and commercialize QPS products and services. The Company is required to pay royalties on net sales of products and services that are covered by patent rights under the agreement at a rate ranging from 1.0% to 7.0%. The Company recorded approximately $1,295 and $1,207 of accrued royalties in connection with this agreement as of September 30, 2022 and December 31, 2021, respectively, payable in the first quarter of 2023 and 2022, respectively.

Research Agreements

In 2019, the Company entered into a research arrangement with an unrelated third party. Under this arrangement, the Company is obligated to pay such third party $415 and $120 in 2022 and 2023, respectively.

(14) Net loss per share attributable to common stockholders

Potentially issuable shares of common stock include shares issuable upon the exercise of outstanding employee stock option awards. Awards granted with performance conditions are excluded from the shares used to compute diluted earnings per share until the performance conditions associated with the awards are met.

The following table sets forth the computation of basic and diluted earnings per common share:

	Three months ended September 30,		Nine months ended September 30,	
	2022	2021	2022	2021
Net loss	$ (17,872)	$ (11,617)	$ (51,766)	$ (25,262)
Dividends accrued on redeemable convertible preferred stock	—	—	—	(1,435)
Accretion of redeemable convertible preferred stock	—	—	—	(296)
Adjusted net loss attributable to common stockholders	$ (17,872)	$ (11,617)	$ (51,766)	$ (26,993)
Weighted average common shares used in net loss per share attributable to common stockholders, basic and diluted	37,900,821	37,162,489	37,660,814	23,407,358
Basic and diluted net loss per common share outstanding	$ (0.47)	$ (0.31)	$ (1.37)	$ (1.15)

The Company's potential dilutive securities, which include stock options, unvested restricted stock units, convertible preferred stock, and the outstanding warrant, have been excluded from the computation of diluted net loss per share attributable to common stockholders whenever the effect of including them would be to reduce the net loss per share. In periods where there is a net loss, the weighted average number of common shares outstanding used to calculate both basic and diluted net loss per share attributable to common stockholders is the same. The following potential common shares, presented based on amounts outstanding at each period end, were excluded from the calculation of diluted net loss per share attributable to common stockholders for the periods indicated because including them would have had an anti-dilutive effect:

	Nine months ended September 30, 2022	Nine months ended September 30, 2021
Outstanding stock options	6,631,690	5,450,055
Unvested restricted stock units	349,900	—
Warrant to purchase common stock	—	158,274
Total	6,981,590	5,608,329

(15) Segments

Operating segments are defined as components of an enterprise about which separate financial information is available that is evaluated regularly by the chief operating decision maker, or decision-making group, in deciding how to allocate resources and in assessing performance. The Company's chief operating decision maker is its Chief Executive Officer. The Company has one business activity and there are no segment managers who are held accountable for operations. Accordingly, the Company has a single reportable segment structure. The Company's principal operations and decision-making functions are located in the United States.

The following table provides the Company's revenues by geographical market based on the location where the services were provided or to which product was shipped:

	Three months ended September 30,		Nine months ended September 30,	
	2022	2021	2022	2021
North America	$ 10,921	$ 7,394	$ 29,723	$ 19,004
APAC	3,812	2,828	11,592	9,527
EMEA	4,119	3,254	12,325	10,228
Total Revenue	$ 18,852	$ 13,476	$ 53,640	$ 38,759

	Three months ended September 30,		Nine months ended September 30,	
	2022	2021	2022	2021
North America	58 %	55 %	55 %	49 %
APAC	20 %	21 %	22 %	25 %
EMEA	22 %	24 %	23 %	26 %
Total Revenue	100 %	100 %	100 %	100 %

North America includes the United States and related territories, as well as Canada. APAC also includes Australia. For the three months ended September 30, 2022, the Company had two countries outside of the United States with 10% and 10% of total revenue, respectively. For the nine months ended September 30, 2022, the Company had one country outside of the United States with 10% of total revenue. For the three and nine months ended September 30, 2021, the Company had one country outside of the United States with 14% and 16% of total revenue, respectively.

As of September 30, 2022 and December 31, 2021, substantially all of the Company's long-lived assets are located in the United States.

(16) Related party transactions

Argonaut Manufacturing Services Inc. ("AMS") is a portfolio company of Telegraph Hill Partners, which holds greater than 5% of our total outstanding shares. During the three and nine months ended September 30, 2022, the Company incurred costs of goods sold of approximately $1,481 and $3,895, respectively, related to sales of consumables manufactured by AMS. During the three and nine months ended September 30, 2021, the Company incurred costs of goods sold of approximately $868 and $2,594, respectively, related to sales of consumables manufactured by AMS. As of September 30, 2022 and December 31, 2021, $6,827 and $4,263, respectively, is included in inventory related to consumables manufactured by AMS. As of September 30, 2022 and December 31, 2021, the Company had $914 and $1,700 in accounts payable, respectively, due to AMS.

(17) Leases

On January 1, 2022, the Company adopted ASU No. 2016-02, *Leases* (Topic 842), (ASC 842), using the modified retrospective method. The Company chose to apply the transition provisions as of the period of adoption. Results for reporting periods beginning on or after January 1, 2022 are presented under ASC 842 while prior period amounts are not adjusted and continue to be reported in accordance with our historical accounting under ASC 840.

Adoption of the new standard resulted in the recording of $10,409 of operating lease right of use assets, $673 of financing lease right of use assets, $2,741 of short-term operating lease liabilities, $272 of short-term financing operating lease liabilities, $7,968 of long-term operating lease liabilities, and $197 of long-term financing lease liabilities. The difference between the operating lease liabilities and operating right of use assets is associated with existing deferred rent under ASC 840. The following table summarizes the amount by which each financial statement line item was affected in the current reporting period due to the adoption of ASC 842 as compared with the guidance that was in effect before the change.

	December 31, 2021	ASC 842 Adjustment	January 1, 2022
Assets			
Operating lease right of use assets, net	$ —	$ 10,409	$ 10,409
Financing lease right of use assets, net	—	673	673
Property and equipment, net	673	(673)	—
Total assets	$ 190,907	$ 10,409	$ 201,316
Liabilities and stockholders' equity			
Deferred rent	$ 300	$ (300)	$ —
Current portion of capital lease liabilities	272	(272)	—
Current portion of operating lease liabilities	—	2,741	2,741
Current portion of financing lease liabilities	—	272	272
Total current liabilities	27,682	2,441	30,123
Capital lease liabilities, net of current portion	197	(197)	—
Operating lease liabilities, net of current portion	—	7,968	7,968
Financing lease liabilities, net of current portion	—	197	197
Total liabilities	69,556	10,409	79,965
Stockholders' equity			
Total stockholders' equity	121,351	—	121,351
Total liabilities and stockholders' equity	$ 190,907	$ 10,409	$ 201,316

The Company considers a lease to be a contract, or part of a contract, that conveys the right to control the use of identified property or equipment (an identified asset) for a period of time in exchange for consideration. The Company leases office, lab, and warehouse spaces as follows:

In July 2019, the Company entered into a seven-year office lease agreement for office and laboratory space in Marlborough, MA. In connection with this agreement, the Company paid a security deposit totaling $450 in the form of a letter of credit. On June 18, 2021, the Company entered into an amendment to reduce its letter of credit to $300. The Company’s letter of credit is recorded as restricted cash in the consolidated balance sheet.

In July 2019, the Company signed a seven-year lease agreement for office and laboratory space in Menlo Park, CA. In connection with this agreement, the Company paid a security deposit totaling $181, which is recorded as a component of long-term assets in the consolidated balance sheet; the lease commencement date was May 2020. In July of 2021, the Company signed a 70-month amendment to its lease in Menlo Park, CA to expand its existing space. In connection with this agreement, the Company paid a security deposit totaling $92, in addition to the existing security deposit, which is recorded as a component of long-term assets in the consolidated balance sheet; the lease commencement date was August 2021.

In August 2021, the Company signed a 30-month lease with MTP Equity Partners, LLC for office space in Marlborough, MA. In connection with this agreement, the Company paid a security deposit totaling $43, which is recorded as a component of long-term assets in the consolidated balance sheet; The lease commencement date was August 2021.

In March 2022, the Company signed a 96-month lease with Atlantic-Fulcrum Realty LLC for warehouse space in Marlborough, MA. The leased premises ranges from approximately 16,068 rentable square feet to 32,125 rentable square feet during the lease term. The lease commencement date was April 2022.

The Company holds various auto leases which have an initial term of 48 months.

For the nine months ended September 30, 2022, the Company entered into four financing leases for staining equipment. The Company also holds financing leases for computer equipment, staining equipment, and furniture which the Company was accounting for as capital leases prior to its adoption of ASC 842.

Leases with an initial term of 12 months or less are not recorded on the balance sheet; the Company recognizes lease expense for these leases on a straight-line basis over the lease term. For these lease agreements, the Company has elected the practical expedient to not separate non-lease and lease components and instead to account for them as a single lease component.

Under Topic 842, lease payments include: fixed payments, including in-substance fixed payments, less any lease incentives paid or payable to the lessee; variable lease payments that depend on an index or a rate; exercise price of a purchase option reasonably certain to be exercised; penalties for terminating a lease; and amounts where it is probable that the Company will owe under a residual value guarantee. Refundable deposits are not considered to be a fixed payment. Variable lease costs that are not based on an index or a rate are recorded to expenses in the period incurred. Lease term is determined at lease commencement. The initial determination of a lease liability is calculated as the net present value of the lease payments not yet paid.

Some leases include an option to renew, with renewal terms that can extend the lease term by five years. The exercise of lease renewal options is at the Company's sole discretion. None of these options to renew are recognized as part of the Company's right-to-use asset or lease liability as of September 30, 2022, as renewal was determined to not be reasonably assured. The depreciable life of assets and leasehold improvements are limited by the expected lease term. The Company recognizes lease expense for operating leases on a straight-line basis over the lease term. The Company recognizes amortization expense for finance leases over the lease term based on the terms of the lease agreement.

The Company's lease agreements do not contain any material residual value guarantees or material restrictive covenants.

As most of the Company's leases do not provide an implicit rate, the Company used its incremental borrowing rate based on the information available at the adoption or commencement date, in determining the present value of lease payments.

The table below summarizes the Company's lease costs for the three and nine months ended September 30, 2022:

Lease Costs	Classification	Three Months Ended September 30, 2022	Nine Months Ended September 30, 2022
Finance lease cost:			
Amortization of right-of-use assets	Cost of service and other revenue	$ 71	$ 105
Amortization of right-of-use assets	Depreciation and amortization	121	387
Interest on lease liabilities	Interest expense	18	38
Operating lease cost	Selling, general and administrative	813	2,328
Total lease cost		$ 1,023	$ 2,858

As of September 30, 2022, future minimum commitments under ASC 842 under the Company's operating leases were as follows:

Maturity of operating lease liabilities	As of September 30, 2022
Remainder 2022	$ 803
2023	3,103
2024	2,737
2025	2,799
2026	2,599
2027 and thereafter	2,103
Total lease payments	$ 14,144
Less: discount to lease payments	(2,417)
Total operating lease liabilities	$ 11,727

As of September 30, 2022, future minimum commitments under ASC 842 under the Company's financing leases were as follows:

Maturity of financing lease liabilities	As of September 30, 2022
Remainder 2022	$ 175
2023	623
2024	495
2025	146
2026	—
2027 and thereafter	—
Total lease payments	$ 1,439
Less: discount to lease payments	(154)
Total financing lease liabilities	$ 1,285

The table below summarizes the weighted-average remaining lease term (in years), the weighted-average incremental borrowing rate (in percentages), as well as supplemental cash flow information related to leases for the three and nine months ended September 30, 2022:

Lease Term, Discount Rates, and Other	Nine Months Ended September 30, 2022
Weighted average remaining lease term	
Operating leases	4.8 years
Financing leases	2.6 years
Weighted average incremental borrowing rate	
Operating leases	7.85 %
Financing leases	7.19 %
Cash payments of amounts included in lease liabilities	
Operating cash flows from operating leases	$ 2,211
Operating cash flows from finance leases	39
Financing cash flows from finance leases	458

(18) Subsequent events

The Company has evaluated subsequent events from the consolidated balance sheet date through November 7, 2022, which is the date the consolidated financial statements were issued.

On November 7, 2022, the Company entered into Amendment No. 3 to the Midcap Trust Term Loan (“Amendment No. 3”), which permitted the draw of two additional tranches, each totaling $11,250, the first of which was drawn on November 7, 2022. The remaining tranche will become available for draw after June 30, 2023, but before December 31, 2023, and is subject to the Company achieving certain trailing twelve-month revenue targets. Amendment No. 3 also delayed the amortization start dates for the outstanding loan amounts from April 1, 2025 until December 1, 2025 (subject to further extension upon certain conditions), at which point the Company will repay the principal amounts in equal monthly installments until the new maturity date of November 1, 2027, which was extended pursuant to Amendment No. 3. In addition, Amendment No. 3 amended the interest rate payable on the term loan to apply an interest rate equal to the SOFR rate (with a floor of 2.50%) plus 6.80%, and reset the call protection to begin as of November 7, 2025. Finally, Amendment No. 3 provides for a commitment fee of 0.5% payable on November 7, 2022 on the new tranche amounts and an exit fee of 4.75%. Substantially all other terms and conditions, and covenants of the credit agreement remain unchanged.

On November 7, 2022, the Company entered into an Equity Distribution Agreement (the “Equity Distribution Agreement”) with Piper Sandler & Co. (“Piper Sandler”) with respect to an at-the-market offering program under which the Company may offer and sell, from time to time at its sole discretion, shares of its common stock, par value $0.00001 per share (the “Common Stock”), having an aggregate offering price of up to $50.0 million (the “Placement Shares”) through Piper Sandler as its sales agent. The issuance and sale, if any, of the Placement Shares by the Company under the Equity Distribution Agreement is subject to the effectiveness of the Company’s registration statement on Form S-3, filed with the Commission on November 7, 2022.

Item 2. Management’s Discussion and Analysis of Financial Condition and Results of Operations

You should read the following discussion and analysis of financial condition and results of operations together with our consolidated financial statements and related notes included elsewhere in this Quarterly Report on Form 10-Q and our audited consolidated financial statements and notes thereto and management’s discussion and analysis of financial condition and results of operations for the fiscal year ended December 31, 2021 included in the Annual Report on Form 10-K filed with the Securities and Exchange Commission on March 15, 2022. Our actual results could differ materially from those anticipated in these forward-looking statements as a result of various factors, including those in our Annual

Report on Form 10-K for the year ended December 31, 2021, as referred to in the section titled "Risk Factors" under Part II, Item 1A below. Please also see the section titled "Special note regarding forward looking statements."

Overview

We are an innovative life sciences technology company delivering spatial biology solutions focused on transforming discovery and clinical research. Our mission is to deliver a revolutionary new class of spatially derived biomarkers that empower life sciences researchers to better understand disease and clinicians to improve patient outcomes. Spatial biology refers to a rapidly evolving technology that enables academic and biopharma scientists to detect and map the distribution of cell types and biomarkers across whole tissue samples at single cell resolution, enabling advancements in their understanding of disease progression and patient response to therapy. Through our PhenoCycler™ and PhenoImager™ platforms, reagents, software and services, we offer end-to-end solutions to perform tissue analysis and spatial phenotyping across the full continuum, from discovery through translational and clinical research.

Our spatial biology solutions measure cells and proteins by providing biomarker data in its spatial context while preserving tissue integrity. Biomarkers are objective measures that capture what is happening in a cell or tissue at a given moment. Current genomic and proteomic methods, such as next-generation sequencing (NGS), single-cell analysis, flow cytometry and mass spectrometry, are providing meaningful data but require the destruction of the tissue sample for analysis. While valuable and broadly adopted, these approaches allow scientists to analyze the biomarkers and cells that comprise the tissue but do not provide the fundamental information about tissue structure, cellular interactions and the localized measurements of key biomarkers. Furthermore, current non-destructive tissue analysis and histological methods provide some limited spatial information, but only measure a minimal number of biomarkers at a time and require expert pathologist interpretation. Our platforms address these limitations by providing end-to-end solutions that enable researchers to quantitatively interrogate a large number of biomarkers and cell types across a tissue section at single cell resolution. The result is a detailed and computable map of the tissue sample that thoroughly captures the underlying tissue dynamics and interactions between key cell types and biomarkers, a process now referred to as spatial phenotyping. We believe that we are the only business with the breadth of platform capabilities that enable researchers to do a deep exploratory and discovery study, and then further advance and scale their research through the translational and clinical phases, leading to a better understanding of human biology, disease progression and response to therapy.

We offer distinct stand-alone as well as integrated platforms for spatial phenotyping, designed to serve the unique needs of our customers in the discovery, translational and clinical markets. The PhenoCycler, is an ultra-high parameter and cost-effective platform ideally suited for discovery high-plex research. The PhenoImager platforms, which includes the newly introduced Fusion instrument and HT instrument (formerly Vectra Polaris), provide high-throughput with the automation and robustness needed for translational and clinical applications. Furthermore, the PhenoCycler and the PhenoImager Fusion can be integrated into a combined system, PhenoCycler-Fusion System, to enable spatial discovery at scale. Together, the systems offer seamless and integrated workflow solutions for our customers, including important benefits such as flexible sample types, automated sample processing, scalability, comprehensive data analysis and software solutions and dedicated field and applications support. With these platforms, our customers are performing spatial phenotyping to further advance their understanding of diseases such as cancer, neurological and autoimmune disorders, and many other therapeutic areas.

For the three and nine months ended September 30, 2022, revenue from North America accounted for approximately 58% and 55% of our revenue, respectively. For the three and nine months ended September 30, 2021, revenue from North America accounted for approximately 55% and 49% of our revenue, respectively.

As of September 30, 2022, we employed a commercial team of 149 employees, including many with significant industry and technical experience. This total includes field instrument service personnel who are classified in cost of goods sold in our consolidated statements of operations. We follow a direct sales model in North America and EMEA, while selling through third party distributors and dealers in APAC.

We focus a substantial portion of our resources on research and development, as well as on business development and sales and marketing. Our research and development efforts are geared towards developing new instruments and assay capabilities, as well as new reagent kits, to meet both our customers' needs and to address new markets. We intend to continue making significant investments in this area for the foreseeable future. We also intend to continue to make investments in building our sales team and marketing our products and services to potential customers.

We generally outsource all of our production manufacturing. Design work, prototyping and pilot manufacturing are performed in-house before outsourcing to third party contract manufacturers. Our outsourced production strategy is intended to drive cost leverage and scale, and avoid the high capital outlays and fixed costs related to constructing and operating a manufacturing facility. The contract manufacturers of our systems and reagent kits are located in the United States and Asia. Certain of our suppliers of components and materials are single source suppliers. We manufacture and assemble certain instrument components in-house.

As of the date of this Quarterly Report on Form 10-Q, we have financed our operations primarily from the issuance and sale of convertible preferred stock, borrowings under our long-term debt agreement, and our IPO. We have incurred net losses in each year since our inception in 2015. Our net losses were $17.9 million, $51.8 million, $11.6 million and $25.3 million for the three and nine months ended September 30, 2022 and 2021, respectively. We expect to continue to incur significant expenses and operating losses for the foreseeable future. We expect our expenses will increase substantially in connection with our ongoing activities, as we:

- attract, hire and retain qualified personnel, including the expansion of our commercial capabilities and organizations;
- market and sell new and existing solutions and services;
- invest in processes and infrastructure to scale our business;
- support research and development to introduce new solutions;
- expand, protect and defend our intellectual property; and
- acquire complementary businesses or technologies to support the growth of our business.

Key factors affecting our results of operations and future performance

There are a number of factors that have impacted, and we believe will continue to impact, our business, results of operations and growth. Our ability to successfully address these factors is subject to various risks and uncertainties, including those described under the heading "*Risk Factors*."

Expansion of our installed base

We are focused on increasing sales of our PhenoCycler and PhenoImager platforms (Fusion and HT) to new and existing customers. Our financial performance has historically been driven by, and will continue to be impacted by, the volume of instrument sales. Additionally, instrument sales are a leading indicator of future recurring revenue from consumables and services. Our operating results and growth prospects will be dependent in part on our ability to increase our instrument installed base as we further penetrate existing markets and expand into, or offer new features and solutions that appeal to, new markets.

We believe our market is still evolving and relatively underpenetrated. As spatial biology is further validated through rapid acceleration of peer-reviewed publications and growing adoption by the life sciences research market, we believe we have an opportunity to significantly increase our installed base. In order to capitalize on this opportunity to drive adoption of our platforms across the entire market, we intend to expand our global sales and marketing organizations, increase the scale of our outbound marketing activities, invest in commercial channel infrastructure and deliver new, market-leading solutions to our customers. In addition, we regularly solicit feedback from our customers in order to enhance our solutions and their applications for life sciences research, which we believe will drive increased adoption of our platforms as they better serve our customers' needs.

Drive incremental pull through

We believe that expansion of our installed base to new and existing customers will drive an increase in our recurring reagent and instrument service revenue. In addition, as our research and development team identifies and launches new applications and biomarker targets, we expect to increase incremental pull through on our existing and new instrument installed base. Recurring revenue was 36%, 37%, 38% and 40% of total revenue for the three and nine months ended September 30, 2022 and 2021, respectively. Our recurring revenue as a percentage of total product and service revenue will vary based upon new device placements in the period. As our installed base expands, we expect recurring revenue on an absolute basis to increase and become an increasingly important contributor to our revenue.

Improve revenue mix and gross margin

Our revenue is primarily derived from sales of our platforms, consumables, software, and services. Our revenue mix will fluctuate from period-to-period, particularly revenue generated from instrument sales. As our installed base grows, we expect consumables and instrument service revenue to constitute a larger percentage of total revenue.

Our margins are higher for those instruments and consumables that we sell directly to customers compared to those sold through distributors.

Future instrument and consumable selling prices and gross margins may fluctuate due to a variety of factors, including the introduction by others of competing products and solutions. We aim to mitigate downward pressure on our average selling prices by increasing the value proposition offered by our instruments and consumables, primarily by expanding the applications for our devices and increasing the quantity and quality of data that can be obtained using our consumables.

COVID-19 Impact

The continued spread of COVID-19, particularly any future variants that may be more transmissible and have more severe symptoms than current variants, may extend the impact of COVID-19 on our business. The impact of this pandemic has been and may continue to be extensive in many aspects of society, which has resulted in and may continue to result in significant disruptions to the global economy, as well as businesses and capital markets around the world.

Impacts in 2021 and 2022 to our business as a result of COVID-19 include disruptions to our manufacturing operations and supply chain caused by facility closures, reductions in operating hours, staggered shifts and other social distancing efforts, decreased productivity and unavailability of materials or components, limitations on our employees' and customers' ability to travel, and delays in product installations, trainings or shipments to and from affected countries and within the United States. Our corporate office facility is open for those who want to work in that space, subject to certain restrictions. While we learned during COVID-19 that we can work very effectively in a fully-remote environment, the partial return to in-office work and the transition to permanent remote working arrangements for some employees may result in increased costs, decreased efficiency, deterioration of corporate culture, greater exposure to cybersecurity threats, and other operational risks.

Disruptions in our customers' operations have impacted and may continue to impact our business. We do not yet know the net impact that the COVID-19 pandemic and any future variants of the virus may have on our business and cannot guarantee that it will not be materially negative. Although we continue to monitor the situation and may adjust our current policies as more information and public health guidance become available, the ongoing effects of the COVID-19 pandemic and/or the precautionary measures that we have adopted may create operational and other challenges, any of which could harm our business and results of operations. While we maintain an inventory of finished products and raw materials used in our products, a prolonged pandemic could lead to shortages in the raw materials necessary to manufacture our products. If we experience a prolonged disruption in our manufacturing, supply chains or commercial operations, or if demand for our products is significantly reduced as a result of the COVID-19 pandemic, we would expect to experience a material adverse impact on our business, financial condition, results of operations and prospects.

Historically, a significant portion of our field sales, customer training events and other application services have been conducted in person, and the rollout of our new products has historically been supported by our participation at industry conferences. As a result of the COVID-19 pandemic, and the precautionary measures that we have adopted, substantially all of our field sales and professional services activities were conducted remotely for over two years, which resulted in a decrease in our travel expenditures. However, our travel expenditures have begun to increase as COVID-19 restrictions have eased, which could negatively impact our financial condition and results of operations. As of the date of this Quarterly Report on Form 10-Q, we do not yet know the extent of the negative impact of such restrictions and precautionary measures on our ability to attract new customers or retain and expand our relationships with existing customers over the near and long term. The length of time and full extent to which the COVID-19 pandemic may directly or indirectly impact our business, results of operations and financial condition will depend on future developments that are highly uncertain, subject to change and difficult to predict.

License Agreements

In September 2018, in connection with the acquisition of the QPS technology from PKI, we entered into a license and royalty agreement with PKI, Cambridge Research, and VisEn Medical Inc., pursuant to which such parties granted us an exclusive, nontransferable, sublicensable (subject to certain conditions) license under certain patent rights and know-how to make, use, import and commercialize PhenoImager products and services. We are required to pay royalties on net sales of products and services that are covered by patent rights under the agreement at a rate ranging from 1.0% to 7.0%.

Key Business Metrics

We regularly review the number of instrument placements and cumulative instrument placement as key metrics to evaluate our business, measure our performance, identify trends affecting our business, develop financial projections, and make strategic decisions. We believe that these metrics are representative of our current business; however, we anticipate these will change or may be substituted for additional or different metrics as our business grows.

During the three and nine months ended September 30, 2022 and 2021, our instrument placements were as follows:

	Three months ended September 30,		Nine months ended September 30,	
	2022	2021	2022	2021
Instrument Placements:	55	33	166	101

Our instruments are sold globally to leading biopharma companies and top research institutions and medical centers. Our quarterly instrument placements fluctuate considerably from period-to-period due to the type and size of our customers and their procurement and budgeting cycles. We expect continued fluctuations in our quarterly period-to-period number of instrument placements.

We believe our instrument placements are important metrics to measure our business because together they are driven by our ability to secure new customers and drive adoption of our PhenoCycler and PhenoImager platforms and provide insights into anticipated recurring revenue for consumables and instrument services.

Components of results of operations

Revenue

Product Revenue

We generate product revenue from the sale of our instruments, consumables and software products. Instrument sales accounted for 66%, 66%, 65% and 64% of our product revenue for the three and nine months ended September 30, 2022 and 2021, respectively. Consumables revenue accounted for 33%, 33%, 32% and 33% of our product revenue for the three and nine months ended September 30, 2022 and 2021, respectively.

Our current instrument offerings include our PhenoCycler and PhenoImager platforms. Our sales process with customers is often long and involves multiple levels of approvals. As a result, the revenue for our platforms can vary significantly from period-to-period and has been, and may continue to be, concentrated in a small number of customers in any given period.

We sell our instruments directly to customers and through distributors. Each of our instrument sales drives various streams of recurring revenue comprised of consumable product sales and instrument services.

Service and Other Revenue

We primarily generate service and other revenue from instrument service, which generally consists of sales of extended service contracts, in addition to installation and training, as well as from our laboratory services operations, where we provide sample testing services to customers utilizing our in-house lab operation, and revenue generated from companion diagnostic development.

We offer our customers extended warranty and service plans for our platforms. Our extended warranty and service plans are offered for periods beyond the standard one-year warranty that all customers receive. These extended warranty and service plans generally have fixed fees and terms ranging from one to four additional years. We recognize revenue from the sale of extended warranty and service plans over the respective coverage period, which approximates the service effort provided by us.

We record shipping and handling billed to customers as service and other revenue and the related costs in cost of service and other revenue in the consolidated statement of operations.

During the three and nine months ended September 30, 2022 and 2021, respectively, our revenue was comprised of the following sources:

	Three months ended September 30,		Nine months ended September 30,	
($ in thousands)	**2022**	**2021**	**2022**	**2021**
Revenue:				
Product revenue	$ 14,438	$ 10,874	$ 41,942	$ 31,556
Service and other revenue	4,414	2,602	11,698	7,203
Total revenue	$ 18,852	$ 13,476	$ 53,640	$ 38,759

We sell our products globally. We sell directly to end customers in North America and EMEA and we sell through third party distributors and dealers in the APAC region.

Cost of Goods Sold, Gross Profit and Gross Margin

Product cost of revenue primarily consists of costs for finished goods (both instruments and reagents) produced by our contract manufacturers, and associated freight, shipping and handling costs for products shipped to customers, salaries and other personnel costs, and other direct costs related to those sales recognized as product revenue in the period. Cost of goods sold for services and other revenue primarily consists of salaries and other personnel costs, travel related to services provided, costs of servicing equipment at customer sites, and all personnel and related costs for our laboratory services operation.

We expect that our cost of goods sold will increase or decrease to the extent that our revenue increases or decreases and depending on the mix of revenue in any specific period.

Gross profit is calculated as revenue less cost of goods sold. Gross margin is gross profit expressed as a percentage of revenue. Our gross profit in future periods will depend on a variety of factors, including: market conditions that may impact our pricing, sales mix among instruments, sales mix changes among consumables, excess and obsolete inventories, costs we pay our contract manufacturers for their services, our cost structure for lab service operations relative to volume, product warranty obligations, and inflationary cost pressures. Our gross profit in future periods will also vary based upon our channel mix and may decrease based upon our distribution channels.

Gross profit was $10.9 million compared to $8.5 million for the three months ended September 30, 2022 and 2021, respectively, and $31.3 million compared to $24.0 million for the nine months ended September 30, 2022 and 2021, respectively.

Operating expenses

Research and development. Research and development costs primarily consist of salaries, benefits, engineering/design costs, laboratory supplies, and materials expenses for employees and third parties engaged in research and product development. We expense all research and development costs in the period in which they are incurred.

We plan to continue to invest in our research and development efforts, including hiring additional employees, to enhance existing products and develop new products. As a result, we expect that our research and development expenses will continue to increase in absolute dollars in future periods. We expect these expenses to vary from period to period as a percentage of revenue.

Selling, general and administrative. Our selling, general and administrative expenses primarily consist of salaries and benefits for employees in our executive, accounting and finance, legal expenses related to intellectual property, sales and marketing, operations, and human resource functions as well as professional services fees, such as consulting, audit, tax and legal fees, general corporate costs, commercial sales functions, marketing, travel expenses, facilities, IT, and allocated overhead expenses. We expect that our sales, general and administrative expenses will continue to increase in absolute dollars, primarily due to increased headcount to support anticipated growth in the business and due to incremental costs associated with operating as a public company. Additionally, we expect an increase in absolute dollars as we expand our commercial sales, marketing and business development teams, increase our presence globally and increase marketing activities to drive awareness and adoption of our platform. We expect these expenses to vary from period to period as a percentage of revenue.

Change in fair value of contingent consideration. On September 28, 2018, the Company acquired substantially all the assets of the Quantitative Pathology Solutions ("QPS") division of PKI. As part of the acquisition, on September 28, 2018, the Company entered into a License Agreement with PKI. Under the terms of the License Agreement, the Company agreed to pay PKI certain royalties as a percentage of future sales of products from the QPS division, in exchange for a perpetual license of the right to produce and sell QPS products. This contingent consideration is subject to remeasurement.

Depreciation and amortization. Depreciation and amortization expenses primarily consist of depreciation of property and equipment and amortization of acquired intangibles.

Other income (expense)

Interest expense. Interest expense consists primarily of interest related to borrowings under our debt obligations.

Change in fair value of warrant liability. Prior to our IPO, we classified our outstanding warrant to purchase shares of our Series D redeemable convertible preferred stock as a liability on our balance sheets at its estimated fair value since the underlying redeemable convertible preferred stock was classified as temporary equity. At the end of each reporting period, changes in the estimated fair value during the period were recorded as a component of other income (expense). In connection with our IPO, this warrant was adjusted to become a warrant to purchase shares of our common stock and met the criteria to be classified within stockholders' equity; therefore, the warrant was no longer subject to liability accounting. Accordingly, the fair value of the warrant liability was reclassified to stockholders' equity.

Gain on extinguishment of debt. Gain on extinguishment of debt relates to forgiveness of our PPP loan.

Other expense, net. Other expense, net consists primarily of franchise tax and foreign currency exchange gains and losses.

Benefit (provision) for income taxes

Our benefit (provision) for income taxes consists primarily of foreign taxes and minimal state taxes in the United States. As we expand the scale and scope of our international business activities, any changes in the United States and foreign taxation of such activities may increase our overall provision for income taxes in the future.

Results of operations

The results of operations presented below should be reviewed in conjunction with the consolidated financial statements and notes included elsewhere in the Quarterly Report on Form 10-Q. The following tables set forth our results of operations for the periods presented:

	Three months ended September 30,		Nine months ended September 30,	
($ in thousands)	2022	2021	2022	2021
Product revenue	$ 14,438	$ 10,874	$ 41,942	$ 31,556
Service and other revenue	4,414	2,602	11,698	7,203
Total revenue	18,852	13,476	53,640	38,759
Cost of goods sold:				
Cost of product revenue	$ 5,455	$ 3,594	$ 14,733	$ 10,381
Cost of service and other revenue	2,490	1,429	7,563	4,386
Total cost of goods sold	7,945	5,023	$ 22,296	$ 14,767
Gross profit	10,907	8,453	$ 31,344	$ 23,992
Operating expenses:				
Selling, general and administrative	19,922	13,725	58,705	31,970
Research and development	5,466	3,999	16,778	10,138
Change in fair value of contingent consideration	357	224	(599)	1,050
Depreciation and amortization	1,815	1,244	4,975	3,352
Total operating expenses	27,560	19,192	79,859	46,510
Loss from operations	(16,653)	(10,739)	(48,515)	(22,518)
Other income (expense):				
Interest expense	(1,109)	(763)	(2,707)	(2,271)
Change in fair value of warrant liability	—	—	—	(2,728)
Gain on extinguishment of debt	—	—	—	2,476
Other expense, net	(89)	(126)	(395)	(244)
Loss before benefit (provision) for income taxes	(17,851)	(11,628)	(51,617)	(25,285)
Benefit (provision) for income taxes	(21)	11	(149)	23
Net loss	$ (17,872)	$ (11,617)	$ (51,766)	$ (25,262)

Comparison of the three months ended September 30, 2022 and 2021

Revenue

	Three months ended September 30,		Change	
($ in thousands, except percentages)	2022	2021	Amount	%
Product revenue	$ 14,438	$ 10,874	3,564	33 %
Service and other revenue	4,414	2,602	1,812	70 %
Total revenue	$ 18,852	$ 13,476	5,376	40 %

Product revenue increased by $3.6 million, or 33%, for the three months ended September 30, 2022, compared to the three months ended September 30, 2021. The increase was primarily driven by a $1.3 million increase in consumable revenue resulting from a larger installed base of 863 systems as of September 30, 2022, as compared to 651 systems as of September 30, 2021, and a $2.4 million increase in instrument revenue resulting from 55 new system placements during the three months ended September 30, 2022, compared to 33 new system placements for the three months ended September 30, 2021.

Service and other revenue increased by $1.8 million, or 70%, for the three months ended September 30, 2022, compared to the three months ended September 30, 2021. The increase was primarily due to an increase relating to lab services operations, revenue generated from companion diagnostic development, and other immaterial changes.

Costs of Goods Sold, Gross Profit and Gross Margin

($ in thousands, except percentages)	Three months ended September 30, 2022	Three months ended September 30, 2021	Change Amount	Change %
Cost of product revenue	$ 5,455	$ 3,594	$ 1,861	52 %
Cost of service and other revenue	2,490	1,429	1,061	74 %
Total cost of goods sold	$ 7,945	$ 5,023	$ 2,922	58 %
Gross profit	$ 10,907	$ 8,453	$ 2,454	29 %
Gross margin	58 %	63 %		

Cost of product revenue increased by $1.9 million, or 52%, for the three months ended September 30, 2022, compared to the three months ended September 30, 2021. The increase in cost of product revenue was primarily driven by costs associated with increased instrument and consumable sales, partially offset by a change of mix in instrument revenue as compared to consumables revenue. Cost of service and other revenue increased by $1.1 million, or 74%, for the three months ended September 30, 2022, compared to the three months ended September 30, 2021. The increase was primarily due to increases in costs for lab services driven by an increase in activity, as well as an increase in extended warranty costs as there were higher customer renewals due to the maturity of the installed base. Additionally, the Company recorded a $0.1 million reduction to cost of goods sold in the three months ended September 30, 2021, associated with the employee retention credit.

Gross profit increased by $2.5 million, or 29%, and gross margin decreased by 5% for the three months ended September 30, 2022 as compared to the three months ended September 30, 2021. The decline in gross margin was primarily due to the costs increases noted above, which includes the impact of inflationary cost pressures.

Operating Expenses

Selling, General and Administrative

($ in thousands, except percentages)	Three months ended September 30, 2022	Three months ended September 30, 2021	Change Amount	Change %
Selling, general and administrative	$ 19,922	$ 13,725	$ 6,197	45 %

Selling, general and administrative expense increased by $6.2 million, or 45%, for the three months ended September 30, 2022, compared to the three months ended September 30, 2021. The increase was primarily due to a $5.2 million increase in personnel-related expenses due to an increase in headcount to support the growth in our overall operations subsequent to our IPO, net of the impact of the employee retention credit of $1.0 million recognized during the third quarter of 2021. Remaining increases are due to higher costs in legal, facilities, supplies, software licenses and subscriptions, and other related costs.

Research and development

($ in thousands, except percentages)	Three months ended September 30, 2022	Three months ended September 30, 2021	Change Amount	Change %
Research and development	$ 5,466	$ 3,999	$ 1,467	37 %

Research and development expense increased by $1.5 million, or 37%, for the three months ended September 30, 2022, compared to the three months ended September 30, 2021, net of the impact of the employee retention credit of $0.4 million recognized during the third quarter of 2021. The increase was primarily due to a $1.3 million increase in personnel-related expenses due to an increase in headcount.

Change in fair value of contingent consideration

($ in thousands, except percentages)	Three months ended September 30, 2022	2021	Change Amount	%
Change in fair value of contingent consideration	$ 357	$ 224	$ 133	59 %

Change in fair value of contingent consideration increased by $0.1 million, or 59%, for the three months ended September 30, 2022, compared to the three months ended September 30, 2021, due to current period remeasurement.

Depreciation and amortization

($ in thousands, except percentages)	Three months ended September 30, 2022	2021	Change Amount	%
Depreciation and amortization	$ 1,815	$ 1,244	$ 571	46 %

The $0.6 million increase in depreciation and amortization expense was primarily related to an increase in property and equipment as of September 30, 2022 as compared to September 30, 2021.

Interest expense

($ in thousands, except percentages)	Three months ended September 30, 2022	2021	Change Amount	%
Interest expense	$ 1,109	$ 763	$ 346	45 %

Interest expense increased by $0.3 million for the three months ended September 30, 2022, compared to the three months ended September 30, 2021.

Other expense, net

($ in thousands, except percentages)	Three months ended September 30, 2022	2021	Change Amount	%
Other expense, net	$ 89	$ 126	$ (37)	(29)%

Other expense, net decreased by $37 thousand for the three months ended September 30, 2022, compared to the three months ended September 30, 2021.

Comparison of the nine months ended September 30, 2022 and 2021

Revenue

($ in thousands, except percentages)	Nine months ended September 30, 2022	2021	Change Amount	%
Product revenue	$ 41,942	$ 31,556	10,386	33 %
Service and other revenue	11,698	7,203	4,495	62 %
Total revenue	$ 53,640	$ 38,759	14,881	38 %

Product revenue increased by $10.4 million, or 33%, for the nine months ended September 30, 2022, compared to the nine months ended September 30, 2021. The increase was primarily driven by a $3.6 million increase in consumable revenue resulting from a larger installed base of 863 systems as of September 30, 2022, as compared to 651 systems as of September 30, 2021, and a $7.3 million increase in instrument revenue resulting from 166 new system placements during the nine months ended September 30, 2022, compared to 101 new system placements for the nine months ended September 30, 2021.

Service and other revenue increased by $4.5 million, or 62%, for the nine months ended September 30, 2022, compared to the nine months ended September 30, 2021. The increase was primarily due to an increase relating to lab services operations, revenue generated from companion diagnostic development, and other immaterial changes.

Costs of Goods Sold, Gross Profit and Gross Margin

($ in thousands, except percentages)	Nine months ended September 30, 2022	Nine months ended September 30, 2021	Change Amount	Change %
Cost of product revenue	$ 14,733	$ 10,381	$ 4,352	42 %
Cost of service and other revenue	7,563	4,386	3,177	72 %
Total cost of goods sold	$ 22,296	$ 14,767	$ 7,529	51 %
Gross profit	$ 31,344	$ 23,992	$ 7,352	31 %
Gross margin	58 %	62 %		

Cost of product revenue increased by $4.4 million, or 42%, for the nine months ended September 30, 2022, compared to the nine months ended September 30, 2021. The increase in cost of product revenue was primarily driven by costs associated with increased instrument and consumable sales. Cost of service and other revenue increased by $3.2 million, or 72%, for the nine months ended September 30, 2022, compared to the nine months ended September 30, 2021. The increase was primarily due to increases in costs for lab services driven by an increase in activity, as well as an increase in extended warranty costs as there were higher customer renewals due to the maturity of the installed base. Additionally, the Company recorded a $0.4 million reduction to cost of goods sold in the nine months ended September 30, 2021, associated with the employee retention credit.

Gross profit increased by $7.4 million, or 31%, and gross margin decreased by 4% for the nine months ended September 30, 2022 as compared to the nine months ended September 30, 2021. The decline in gross margin was primarily due to the costs increases noted above, which includes the impact of inflationary cost pressures.

Operating Expenses

Selling, General and Administrative

($ in thousands, except percentages)	Nine months ended September 30, 2022	Nine months ended September 30, 2021	Change Amount	Change %
Selling, general and administrative	$ 58,705	$ 31,970	$ 26,735	84 %

Selling, general and administrative expense increased by $26.7 million, or 84%, for the nine months ended September 30, 2022, compared to the nine months ended September 30, 2021. The increase was primarily due to a $18.4 million increase in personnel-related expenses due to an increase in headcount to support the growth in the Company's overall operations subsequent to the IPO, net of the impact of the employee retention credit of $2.6 million recognized during 2021. Additionally, there was a $3.4 million increase in professional fees and other third-party fees, which are largely incremental costs of operating a public company, including increased marketing, legal, accounting, insurance, and other consulting costs. Remaining increases were due to higher costs in recruiting, facilities, supplies, software licenses and subscriptions, and other related costs.

Research and development

($ in thousands, except percentages)	Nine months ended September 30, 2022	Nine months ended September 30, 2021	Change Amount	Change %
Research and development	$ 16,778	$ 10,138	$ 6,640	65 %

Research and development expense increased by $6.6 million, or 65%, for the nine months ended September 30, 2022, compared to the nine months ended September 30, 2021. The increase was primarily due to a $4.4 million increase in personnel-related expenses due to an increase in headcount, net of the impact of the employee retention credit of $1.3 million recognized during 2021. Additionally, there was a $1.5 million increase in third-party consulting and lab supplies consumed as the Company ramped up its efforts subsequent to the IPO.

Change in fair value of contingent consideration

($ in thousands, except percentages)	Nine months ended September 30, 2022	Nine months ended September 30, 2021	Change Amount	Change %
Change in fair value of contingent consideration	$ (599)	$ 1,050	$ (1,649)	(157)%

Change in fair value of contingent consideration decreased by $1.6 million, or 157%, for the nine months ended September 30, 2022, compared to the nine months ended September 30, 2021, due to current period remeasurement.

Depreciation and amortization

($ in thousands, except percentages)	Nine months ended September 30, 2022	Nine months ended September 30, 2021	Change Amount	Change %
Depreciation and amortization	$ 4,975	$ 3,352	$ 1,623	48 %

The $1.6 million increase in depreciation and amortization expense was primarily related to an increase in property and equipment as of September 30, 2022 as compared to September 30, 2021.

Interest expense

($ in thousands, except percentages)	Nine months ended September 30, 2022	Nine months ended September 30, 2021	Change Amount	Change %
Interest expense	$ 2,707	$ 2,271	$ 436	19 %

Interest expense increased by $0.4 million for the nine months ended September 30, 2022, compared to the nine months ended September 30, 2021.

Change in fair value of warrant liability

($ in thousands, except percentages)	Nine months ended September 30, 2022	Nine months ended September 30, 2021	Change Amount	Change %
Change in fair value of warrant liability	$ —	$ 2,728	$ (2,728)	(100)%

Change in fair value of warrant liability decreased by $2.7 million, or 100%, for the nine months ended September 30, 2022, compared to the nine months ended September 30, 2021. In connection with the IPO, this warrant was adjusted to become a warrant to purchase shares of the Company’s common stock and met the criteria to be classified within stockholders’ equity; therefore, the warrant is no longer subject to liability accounting, and thus no further remeasurement.

Gain on extinguishment of debt

($ in thousands, except percentages)	Nine months ended September 30, 2022	Nine months ended September 30, 2021	Change Amount	Change %
Gain on extinguishment of debt	$ —	$ 2,476	$ (2,476)	(100)%

Gain on extinguishment of debt decreased by $2.5 million, or 100%, for the nine months ended September 30, 2022, compared to the nine months ended September 30, 2021, due to forgiveness of the PPP Loan in the second quarter of 2021.

Other expense, net

	Nine months ended September 30,		Change	
($ in thousands, except percentages)	2022	2021	Amount	%
Other expense, net	$ 395	$ 244	$ 151	62 %

Other expense, net increased by $151 thousand for the nine months ended September 30, 2022, compared to the nine months ended September 30, 2021.

Liquidity and Capital Resources

As of September 30, 2022, we had approximately $81.7 million in cash, cash equivalents, and marketable securities.

Since our inception, we have experienced losses and negative cash flows from operations, and as of September 30, 2022, we had a consolidated net loss of $51.8 million and an accumulated deficit of $147.9 million. We have primarily relied on equity and debt financings to fund our operations to date.

We expect to incur additional operating losses in the foreseeable future as we continue to invest in the research and development of our product offerings, commercialize and launch platforms, and expand into new markets. Based on our current business plan, we believe the net proceeds from the IPO, together with our existing cash, cash equivalents, marketable securities and anticipated cash flows from operations will be sufficient to meet our working capital and capital expenditure needs over at least the next 12 months following the date of the filing of this Quarterly Report on Form 10-Q.

Our future capital requirements will depend on many factors, including, but not limited to our ability to successfully commercialize and launch products, and to achieve a level of sales adequate to support our cost structure. If we are unable to execute on our business plan and adequately fund operations, or if the business plan requires a level of spending in excess of cash resources, we will have to seek additional equity or debt financing. If additional financings are required from outside sources, we may not be able to raise it on terms acceptable to us or at all. If we are unable to raise additional capital when desired, our business, financial condition, results of operations and prospects could be adversely affected.

Sources of Liquidity

Since our inception, we have financed our operations primarily from the issuance and sale of our convertible preferred stock and borrowings under long-term debt agreements. In April 2021, we completed our IPO, resulting in the receipt of aggregate proceeds of $138.6 million, net of offering costs, underwriter discounts and commissions of $12.8 million.

Convertible preferred stock financings

Through September 30, 2022, we have raised a total of $60.5 million from the issuance and sale of convertible preferred stock, net of costs associated with such financings. Most recently, in 2019 we issued shares of Series D convertible preferred stock for gross proceeds of $25.0 million. All preferred stock converted to common stock immediately prior to our IPO.

Payroll Protection Program loan

During April 2020, we received a $2.48 million small business loan under the Payroll Protection Program (the "PPP Loan"), part of the Coronavirus Aid, Relief and Economic Security Act (the "CARES Act"). The PPP Loan was forgiven in full in June 2021.

Midcap Trust Term Loan

In October 2020, we entered into the Midcap Trust Term Loan for a $37.5 million credit facility, consisting of a senior, secured term loan. We realized $32.5 million in aggregate proceeds as a result of the debt financing. On June 1, 2022, we entered into Amendment No. 2, which permitted the draw of a second tranche of $10.0 million, which was drawn on June 1, 2022. Additionally, Amendment No. 2 provides us with a new third tranche pursuant to which we may draw $10.0 million any time after September 30, 2022 until September 30, 2023. Amendment No. 2 also delayed the amortization start dates for the outstanding loan amounts from November 1, 2023 until April 1, 2025, at which point we will repay the principal amounts in seven equal monthly installments until the maturity date. Finally, Amendment No. 2 amended the interest rate payable on the term loan to apply an interest rate equal to the SOFR rate (with a floor of 1.61448%) plus 6.35%. On September 30, 2022, we drew the third tranche of $10,000 related to Amendment No. 2.

The Midcap Trust Term Loan is subject to a minimum revenue financial covenant measuring our last twelve months trailing revenue, tested on a monthly basis.

The Midcap Trust Term Loan is collateralized by substantially all of our assets. The agreement contains customary negative covenants that limit our ability to, among other things, incur additional indebtedness, grant liens, make investments, repurchase stock, pay dividends, transfer assets and merge or consolidate with any other entity or to acquire all or substantially all the capital stock or property of another entity. The agreement also contains customary affirmative covenants, including requirements to, among other things, deliver audited financial statements. If we default under the Midcap Trust Term Loan and if the default is not cured or waived, the lender could cause any amounts outstanding to be payable immediately. Under certain circumstances, the lender could also exercise its rights with respect to the collateral securing such loans. Moreover, any such default would limit our ability to obtain additional financing, which may have an adverse effect on our cash flow and liquidity.

We were in compliance with all covenants under the Midcap Trust Term Loan as of September 30, 2022.

Cash flows

The following table summarizes our cash flows for the periods presented:

	Nine months ended September 30,	
($ in thousands)	**2022**	**2021**
Net cash provided by (used in):		
Operating activities	$ (43,489)	$ (30,214)
Investing activities	(36,210)	(3,729)
Financing activities	18,456	136,886
Net (decrease) increase in cash, cash equivalents, and restricted cash	$ (61,243)	$ 102,943

Operating activities

Net cash used in operating activities increased by $13.3 million to $43.5 million in the nine months ended September 30, 2022 compared to $30.2 million in the nine months ended September 30, 2021. This amount is attributable to a net loss of $51.8 million and a change in our net operating assets and liabilities of $2.1 million, offset by non-cash charges of $10.4 million. The change in our net operating assets and liabilities was primarily due to increased prepaid expenses and other assets of $0.3 million, increased inventory levels of $4.0 million, and increases in accounts payable, accrued expenses and other liabilities of $0.2 million, offset by decreases in accounts receivable of $0.8 million, and increases in deferred revenue of $1.5 million. Non-cash charges primarily consisted of $5.2 million of depreciation and amortization, $5.3 million of stock-based compensation, $0.4 million of non-cash interest expense, offset by $0.6 million in change in fair value of contingent consideration.

Investing activities

Net cash used in investing activities was $36.2 million in the nine months ended September 30, 2022 compared to $3.7 million during the nine months ended September 30, 2021. This amount was driven by purchases of marketable securities of $40.8 million and purchases of property and equipment of $6.5 million, offset by $11.0 million in maturities of marketable securities.

Financing activities

Net cash provided by financing activities was $18.5 million for the nine months ended September 30, 2022 compared with $136.9 million for the nine months ended September 30, 2021. This amount was driven by $20.0 million in debt proceeds and $0.3 million in proceeds from stock option exercises, offset by $1.2 million in payments of contingent consideration, $0.5 million in principal payments on financing leases, and $0.1 million in payments of debt issuance costs.

Critical accounting policies and estimates

We have prepared our consolidated financial statements in accordance with GAAP. Our preparation of these consolidated financial statements requires us to make estimates, assumptions and judgments that affect the reported amounts of assets, liabilities, revenue, expenses and related disclosures. We evaluate our estimates and judgments on an ongoing basis. We base our estimates on 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 could therefore differ materially from these estimates under different assumptions or conditions.

There have been no significant changes in our critical accounting policies and estimates as compared to the critical accounting policies and estimates disclosed in the section titled “Management’s Discussion and Analysis of Financial Condition and Operations” included in our Annual Report on Form 10-K for the year ended December 31, 2021 filed with the SEC on March 15, 2022 with the exception of the adoption of the FASB’s ASU 2016-02, “*Leases* (Topic 842)” in the first quarter of 2022. Please refer to Note 17 of the notes to the consolidated financial statements for further detail.

Recent accounting pronouncements

For information on recently issued accounting pronouncements, see Note 2 to our consolidated financial statements in this Quarterly Report on Form 10-Q.

JOBS Act accounting election

We are an “emerging growth company,” as defined in the Jumpstart Our Business Startups Act of 2012, or the JOBS Act. Under the JOBS Act, emerging growth companies can delay adopting new or revised accounting standards issued subsequent to the enactment of the JOBS Act until such time as those standards apply to private companies. We have elected to avail ourselves of this extended transition period, and, as a result, we will not be required to adopt new or revised accounting standards on the relevant dates on which adoption of such standards is required for other public companies. We intend to rely on other exemptions provided by the JOBS Act, including without limitation, not being required to comply with the auditor attestation requirements of Section 404(b) of the Sarbanes-Oxley Act of 2002.

Smaller reporting company status

We are also a "smaller reporting company," meaning that the market value of our stock held by non-affiliates is less than $700 million as of the last trading day of our second quarter and our annual revenue is less than $100 million during the most recently completed fiscal year. We may continue to be a smaller reporting company if either (i) the market value of our stock held by non-affiliates is less than $250 million as of the last trading day of our second quarter or (ii) our annual revenue is less than $100 million during the most recently completed fiscal year and the market value of our stock held by non-affiliates is less than $700 million as of the last trading day of our second quarter. If we are a smaller reporting company at the time we cease to be an emerging growth company, we may continue to rely on exemptions from certain disclosure requirements that are available to smaller reporting companies. For example, as a smaller reporting company we may choose to present only the two most recent fiscal years of audited financial statements in our Annual Report on Form 10-K and, similar to emerging growth companies, smaller reporting companies have reduced disclosure obligations regarding executive compensation.

Item 3. Quantitative and Qualitative Disclosures about Market Risk

We are a smaller reporting company, as defined in Rule 12b-2 under the Securities Exchange Act of 1934, as amended, for this reporting period and are not required to provide the information required under this item.

Item 4. Controls and Procedures

Under the supervision and with the participation of our management, including our Chief Executive Officer and Chief Financial Officer, we evaluated the effectiveness of the design and operation of our disclosure controls and procedures pursuant to Rule 13a-15 under the Exchange Act as of the end of the period covered by this report. Based on that evaluation, our Chief Executive Officer and Chief Financial Officer have concluded that our disclosure controls and procedures were effective as of September 30, 2022. There was not any change in our internal control over financial reporting (as such term is defined in Rules 13a-15(f) under the Exchange Act) during the quarter ended September 30, 2022 that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

PART II—OTHER INFORMATION

Item 1. Legal Proceedings

From time to time, we may be subject to legal proceedings. We are not currently a party to or aware of any proceedings that we believe will have, individually or in the aggregate, a material adverse effect on our business, financial condition or results of operations. Regardless of outcome, litigation can have an adverse impact on us because of defense and settlement costs, diversion of management resources and other factors.

Item 1A. Risk Factors

Investing in our common stock involves a high degree of risk. We operate in a rapidly changing environment that involves a number of risks that could materially affect our business, financial condition or future results, some of which are beyond our control. In addition to the other information set forth in this report, the risks and uncertainties that we believe are most important for you to consider are discussed in Part I, Item 1A under the caption "Risk Factors" in our Annual Report on Form 10-K for the year ended December 31, 2021 filed with the SEC on March 15, 2022. The risk factors may be important to understanding other statements in this report and should be read in conjunction with the unaudited financial statements and related notes in this report. The occurrence of any single risk or any combination of risks could materially and adversely affect our business, operations, product pipeline, operating results, financial condition or liquidity, and consequently, the value of our securities. Further, additional risks that we currently do not know about or that we currently believe to be immaterial may also impair our business, financial condition, operating results and prospects.

There have been no material changes to the risk factors described in the Annual Report on Form 10-K for the year ended December 31, 2021 filed with the SEC on March 15, 2022.

Item 2. Unregistered Sales of Equity Securities and Use of Proceeds

Not applicable.

Item 3. Defaults Upon Senior Securities

Not applicable.

Item 4. Mine Safety Disclosures

Not applicable.

Item 5. Other Information

On November 7, 2022, the Company entered into Amendment No. 3 to the Midcap Trust Term Loan (“Amendment No. 3”), which permitted the draw of two additional tranches, each totaling $11,250, the first of which was drawn on November 7, 2022. The remaining tranche will become available for draw after June 30, 2023, but before December 31, 2023, and is subject to the Company achieving certain trailing twelve-month revenue targets. Amendment No. 3 also delayed the amortization start dates for the outstanding loan amounts from April 1, 2025 until December 1, 2025 (subject to further extension upon certain conditions), at which point the Company will repay the principal amounts in equal monthly installments until the new maturity date of November 1, 2027, which was extended pursuant to Amendment No. 3. In addition, Amendment No. 3 amended the interest rate payable on the term loan to apply an interest rate equal to the SOFR rate (with a floor of 2.50%) plus 6.80%, and reset the call protection to begin as of November 7, 2025. Substantially all other terms and conditions, and covenants of the Midcap Trust Term Loan remain unchanged. In connection with entering into Amendment No. 3, the Company agreed to pay the lenders a commitment fee of 0.25% payable on November 7, 2022 on the new tranche amounts and an exit fee of 4.75%.

The foregoing summary of Amendment No. 3 is qualified in its entirety by the full text of Amendment No. 3, a copy of which will be filed with the Company’s Form 10-K for the fiscal year end December 31, 2022.

On November 7, 2022, the Company entered into an Equity Distribution Agreement (the “Equity Distribution Agreement”) with Piper Sandler & Co. (“Piper Sandler”) with respect to an at-the-market offering program under which the Company may offer and sell, from time to time at its sole discretion, shares of its common stock, par value $0.00001 per share (the “Common Stock”), having an aggregate offering price of up to $50.0 million (the “Placement Shares”) through Piper Sandler as its sales agent. The issuance and sale, if any, of the Placement Shares by the Company under the Equity Distribution Agreement is subject to the effectiveness of the Company’s registration statement on Form S-3, filed with the Commission on November 7, 2022.

Subject to the terms and conditions of the Equity Distribution Agreement, Piper Sandler will use its commercially reasonable efforts consistent with its normal trading and sales practices and applicable state and federal laws, rules and regulations and the rules of the NASDAQ Capital Market to sell the Placement Shares from time to time, based upon the Company’s instructions, including any price, time or size limits specified by the Company. Sales of the Placement Shares, if any, under the Equity Distribution Agreement may be made in transactions that are deemed to be “at the market offerings” as defined in Rule 415 under the Securities Act of 1933, as amended. The Company has no obligation to sell any of the Placement Shares and may at any time suspend offers under the Equity Distribution Agreement or terminate the Equity Distribution Agreement. The Company has agreed to pay Piper Sandler commissions for its services in acting as sales agent in the sale of the Placement Shares at a commission rate equal to 3% of the gross sales price per Share sold pursuant to the Equity Distribution Agreement, if any, and has agreed to provide Piper Sandler with customary indemnification and contribution rights. The Equity Distribution Agreement may be terminated by Piper Sandler or the Company at any time upon written notice to the other party.

The foregoing description of the terms of the Equity Distribution Agreement is subject to, and qualified in its entirety by, the Sales Agreement, a copy of which was filed as an exhibit to our registration statement on Form S-3 filed with the Commission on November 7, 2022.

Item 6. Exhibits

Exhibit Number	Exhibit Title	Incorporated by Reference Form	File No.	Exhibit	Filing Date	Filed Herewith
3.1	Amended and Restated Certificate of Incorporation	S-1	333-254760	3.3	3/26/2021	
3.2	Amended and Restated Bylaws	S-1	333-254760	3.4	3/26/2021	
4.1	Amended and Restated Investors' Rights Agreement, dated September 27, 2019, by and among the Registrant and certain of its stockholders	S-1	333-254760	10.15	3/26/2021	
10.1	Equity Distribution Agreement dated November 7, 2022, by and between the Registrant and Piper Sandler & Co.	S-3	333-268214	1.2	11/7/2022	
31.1	Certification of Principal Executive Officer Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002					X
31.2	Certification of Principal Financial and Accounting Officer Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002					X
32.1 *	Certification of Principal Executive Officer Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002					X
32.2 *	Certification of Principal Financial and Accounting Officer 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	Cover Page Interactive Data File (formatted as Inline XBRL and contained in Exhibit 101)					X

* This certification is deemed not filed for purposes 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.

	Akoya Biosciences, Inc.
Date: November 7, 2022	By: /s/ Brian McKelligon Brian McKelligon President and Chief Executive Officer (Principal Executive Officer)
Date: November 7, 2022	By: /s/ Joseph Driscoll Joseph Driscoll Chief Financial Officer (Principal Financial and Accounting Officer)

Exhibit 31.1

CERTIFICATION OF THE CHIEF EXECUTIVE OFFICER
PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Brian McKelligon, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Akoya Biosciences, Inc.;

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)) 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) 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

   c) 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(s) 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.

Date: November 7, 2022

By: /s/ Brian McKelligon
Brian McKelligon
Chief Executive Officer
(Principal Executive Officer)

CERTIFICATION OF THE CHIEF FINANCIAL OFFICER
PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Joseph Driscoll, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Akoya Biosciences, Inc.;

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)) 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) 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

   c) 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(s) 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.

Date: November 7, 2022	By:	/s/ Joseph Driscoll
		Joseph Driscoll Chief Financial Officer (Principal Financial Officer and Principal Accounting 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 Quarterly Report of Akoya Biosciences, Inc. (the "Company") on Form 10-Q for the quarterly period ended September 30, 2022 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I certify, pursuant to 18 U.S.C. § 1350, as adopted pursuant to § 906 of the Sarbanes-Oxley Act of 2002, that to my knowledge:

1. The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended; and

2. The information contained in the Report fairly presents, in all material respects, the financial condition and result of operations of the Company.

Date: November 7, 2022	By:	/s/ Brian McKelligon
		Brian McKelligon
		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 Quarterly Report of Akoya Biosciences, Inc. (the “Company”) on Form 10-Q for the quarterly period ended September 30, 2022 as filed with the Securities and Exchange Commission on the date hereof (the “Report”), I certify, pursuant to 18 U.S.C. § 1350, as adopted pursuant to § 906 of the Sarbanes-Oxley Act of 2002, that to my knowledge:

1. The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended; and

2. The information contained in the Report fairly presents, in all material respects, the financial condition and result of operations of the Company.

Date: November 7, 2022

By: /s/ Joseph Driscoll
Joseph Driscoll
Chief Financial Officer
(Principal Financial Officer and
Principal Accounting Officer)