UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 10-Q

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

For the quarterly period ended September 30, 2024

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: 001-36042

PRECIGEN, INC.
(Exact name of registrant as specified in its charter)

Virginia **(State or other jurisdiction of incorporation or organization)**	**26-0084895** **(I.R.S. Employer Identification Number)**
20374 Seneca Meadows Parkway **Germantown, Maryland** **(Address of principal executive offices)**	**20876** **(Zip Code)**

(301) 556-9900
(Registrant's telephone number, including area code)

N/A
(Former name, former address and former fiscal year, if changed since last report)

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

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock, no par value	PGEN	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, a smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

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

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

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

As of October 31, 2024, 292,869,097 shares of common stock, no par value per share, were issued and outstanding.

PRECIGEN, INC.

FORM 10-Q
TABLE OF CONTENTS

Precigen®, AdenoVerse®, UltraCAR-T®, RheoSwitch®, UltraVector®, RTS®, UltraPorator®, ActoBiotics® and RheoSwitch Therapeutic System® are our and/or our affiliates' registered trademarks in the United States and GenVec™, ActoBio Therapeutics™, AttSite™, and Precigen Therapeutics™ are our and/or our affiliates' common law trademarks in the United States are our and/or our affiliates' common law trademarks in the United States. This Quarterly Report on Form 10-Q, or Quarterly Report, and the information incorporated herein by reference contain references to trademarks, service marks, and trade names owned by us or other companies. Solely for convenience, trademarks, service marks, and trade names referred to in this Quarterly Report and the information incorporated herein, including logos, artwork, and other visual displays, may appear without the ® or ™ symbols, but such references are not intended to indicate, in any way, that we will not assert, to the fullest extent under applicable law, our rights or the rights of the applicable licensor to these trademarks, service marks, and trade names. We do not intend our use or display of other companies' trade names, service marks, or trademarks to imply a relationship with, or endorsement or sponsorship of us by, any other companies. Other trademarks, trade names, and service marks appearing in this Quarterly Report are the property of their respective owners. Unless the context requires otherwise, references in this Quarterly Report to "Precigen", "we", "us", and "our" refer to Precigen, Inc.

Special Note Regarding Forward-Looking Statements

This Quarterly Report contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995, which statements involve substantial risks and uncertainties. All statements, other than statements of historical facts, included in this Quarterly Report, including statements regarding our strategy; future events, including their outcome or timing; future operations; future financial position; future revenue; projected costs; prospects; plans; objectives of management; and expected market growth, are forward-looking statements. The words "aim", "anticipate", "assume", "believe", "continue", "could", "due", "estimate", "expect", "intend", "may", "plan", "positioned", "potential", "predict", "project", "seek", "should", "target", "will", "would", and the negatives of these terms or similar expressions are intended to identify forward-looking statements, although not all forward-looking statements contain these identifying words. These statements may relate to, among other things: (i) the timeliness of regulatory approvals; (ii) our strategy and overall approach to our business model, our efforts to realign our business, and our ability to exercise more control and ownership over the development process and commercialization path; (iii) our ability to successfully enter new markets or develop additional product candidates, including the expected timing and results of investigational studies and preclinical and clinical trials, whether with our collaborators or independently; (iv) our ability to consistently manufacture our product candidates on a timely basis or to establish agreements with third-party manufacturers; (v) our ability to successfully enter into optimal strategic relationships with our subsidiaries and operating companies that we may form in the future; (vi) our ability to hold or generate significant operating capital, including through partnering, asset sales, and operating cost reductions; (vii) actual or anticipated variations in our operating results; (viii) actual or anticipated fluctuations in competitors' or collaborators' operating results or changes in their respective growth rates; (ix) our cash position; (x) market conditions in our industry; (xi) the volatility of our stock price; (xii) the ability, and the ability of our collaborators, to protect our intellectual property and other proprietary rights and technologies; (xiii) outcomes of pending and future litigation; (xiv) the rate and degree of market acceptance of any products developed by us, our subsidiaries, collaborations, or joint ventures, or JVs, and competition from existing technologies and products or new technologies and products that may emerge; (xv) our ability to retain and recruit key personnel; (xvi) expectations related to the use of proceeds from public offerings and other financing efforts; (xvii) estimates regarding expenses, future revenue, capital requirements, and needs for additional financing; (xviii) our substantial doubt about our ability to continue as a going concern; (xix) our timeline to commercialization of our product candidates; (xx) our strategic prioritization and streamlining of resources undertaken to extend our cash runway and focus more of our capital resources on PRGN-2012 and costs related to such prioritization and streamlining of resources; (xxi) potential financings for future liquidity; and (xxii) our ability to successfully partner or sell our paused programs and activities in a timely manner.

Forward-looking statements are based on our beliefs, assumptions, and expectations of our future performance, and may also concern our expectations relating to our subsidiaries and other affiliates. We caution you that the foregoing list may not contain all of the forward-looking statements made in this Quarterly Report.

We may not actually achieve the plans, intentions, or expectations disclosed in our forward-looking statements, and you should not place undue reliance on our forward-looking statements. Actual results or events could differ materially from the plans, intentions, and expectations disclosed in the forward-looking statements we make. We have included important factors in the cautionary statements included in this Quarterly Report, particularly in Part II, Item 1A, "Risk Factors," that could cause actual results or events to differ materially from the forward-looking statements that we make. Our forward-looking statements do not reflect the potential impact of any future acquisitions, mergers, dispositions, JVs, or investments that we may make.

You should read this Quarterly Report, the documents that we reference in this Quarterly Report, our Annual Report on Form 10-K for the year ended December 31, 2023, the other reports we have filed with the Securities and Exchange Commission, or SEC, and the documents that we have filed as exhibits to our filings with the SEC completely and with the understanding that our actual future results may be materially different from what we expect. We do not assume any obligation to update any forward-looking statements, whether as a result of new information, future events or otherwise, except as required by law.

PART I. FINANCIAL INFORMATION

Item 1. Condensed Consolidated Financial Statements

Precigen, Inc. and Subsidiaries
Condensed Consolidated Balance Sheets
(Unaudited)

(Amounts in thousands, except share data)	September 30, 2024	December 31, 2023
Assets		
Current assets		
Cash and cash equivalents	$ 24,725	$ 7,578
Short-term investments	3,906	55,277
Receivables		
Trade, less allowance for credit losses of $0 and $184 as of September 30, 2024 and December 31, 2023	479	902
Other	250	673
Prepaid expenses	5,153	4,325
Total current assets	34,513	68,755
Property, plant and equipment, net	13,538	7,111
Intangible assets, net	4,773	40,701
Goodwill	24,918	26,612
Right-of-use assets	5,307	7,097
Other assets	425	767
Total assets	$ 83,474	$ 151,043

The accompanying notes are an integral part of these condensed consolidated financial statements.

Precigen, Inc. and Subsidiaries
Condensed Consolidated Balance Sheets
(Unaudited)

(Amounts in thousands, except share data)	**September 30, 2024**	**December 31, 2023**
Liabilities and Shareholders' Equity		
Current liabilities		
Accounts payable	$ 4,320	$ 1,726
Accrued compensation and benefits	6,612	8,250
Other accrued liabilities	5,676	6,223
Settlement and indemnification accruals	3,213	5,075
Deferred revenue	407	509
Current portion of lease liabilities	988	1,202
Total current liabilities	21,216	22,985
Deferred revenue, net of current portion	2,032	1,818
Lease liabilities, net of current portion	4,761	5,895
Deferred tax liabilities	89	1,847
Total liabilities	28,098	32,545
Commitments and contingencies (Note 13)		
Shareholders' equity		
Common stock, no par value, 400,000,000 shares authorized as of September 30, 2024 and December 31, 2023; 292,869,097 shares and 256,398,527 shares issued as of September 30, 2024 and December 31, 2023, respectively, 292,869,097 shares and 248,919,096 shares outstanding as of September 30, 2024 and December 31, 2023, respectively.	—	—
Additional paid-in capital	2,126,342	2,084,916
Accumulated deficit	(2,070,979)	(1,964,471)
Accumulated other comprehensive income (loss)	13	(1,947)
Total shareholders' equity	55,376	118,498
Total liabilities and shareholders' equity	$ 83,474	$ 151,043

The accompanying notes are an integral part of these condensed consolidated financial statements.

Precigen, Inc. and Subsidiaries
Condensed Consolidated Statements of Operations
(Unaudited)

	Three Months Ended September 30,		Nine Months Ended September 30,	
(Amounts in thousands, except share and per share data)	**2024**	**2023**	**2024**	**2023**
Revenues				
Product revenues	$ 66	$ 82	$ 235	$ 730
Service revenues	886	1,296	2,478	4,261
Other revenues	1	1	22	6
Total revenues	953	1,379	2,735	4,997
Operating Expenses				
Cost of products and services	1,009	1,537	3,098	4,761
Research and development	11,370	11,583	41,312	35,620
Selling, general and administrative	9,836	9,196	30,293	30,150
Impairment of goodwill	—	—	1,630	—
Impairment of other noncurrent assets	—	—	32,915	—
Total operating expenses	22,215	22,316	109,248	70,531
Operating loss	(21,262)	(20,937)	(106,513)	(65,534)
Other Income (Expense), Net				
Interest expense	(2)	(1)	(6)	(461)
Interest income	283	856	1,210	2,316
Other income (expense), net	(2,985)	281	(2,905)	705
Total other income (expense), net	(2,704)	1,136	(1,701)	2,560
Loss before income taxes	(23,966)	(19,801)	(108,214)	(62,974)
Income tax benefit (expense)	(12)	6	1,706	126
Net loss	$ (23,978)	$ (19,795)	$ (106,508)	$ (62,848)
Net loss per share				
Net loss per share, basic and diluted	$ (0.09)	$ (0.08)	$ (0.41)	$ (0.26)
Weighted average shares outstanding, basic and diluted	275,881,170	248,520,724	259,254,775	243,075,262

The accompanying notes are an integral part of these condensed consolidated financial statements.

Precigen, Inc. and Subsidiaries
Condensed Consolidated Statements of Comprehensive Loss
(Unaudited)

	Three Months Ended September 30,		Nine Months Ended September 30,	
(Amounts in thousands)	**2024**	**2023**	**2024**	**2023**
Net loss	$ (23,978)	$ (19,795)	$ (106,508)	$ (62,848)
Other comprehensive income (loss):				
Unrealized gain on investments	29	123	44	614
Loss on foreign currency translation adjustments	(22)	(1,166)	(999)	(687)
Reclassification of cumulative foreign currency translation adjustments to other income (expense), net	2,915	—	2,915	—
Comprehensive loss	$ (21,056)	$ (20,838)	$ (104,548)	$ (62,921)

The accompanying notes are an integral part of these condensed consolidated financial statements.

Precigen, Inc. and Subsidiaries
Condensed Consolidated Statements of Shareholders' Equity
(Unaudited)

(Amounts in thousands, except share data)	Common Stock		Treasury Stock		Additional Paid-in Capital	Accumulated Other Comprehensive Income (Loss)	Accumulated Deficit	Total Shareholders' Equity
	Shares	Amount	Shares	Amount				
Balances at June 30, 2024	252,656,151	$ —	3,742,376	$ —	$ 2,093,080	$ (2,909)	$ (2,047,001)	$ 43,170
Stock-based compensation expense	—	—	—	—	2,061	—	—	2,061
Shares issued upon vesting of restricted stock units and for exercises of stock options	316,402	—	(316,402)	—	294	—	—	294
Shares issued for accrued compensation		—		—		—	—	—
Shares issued as payment for services	17,605	—	(17,605)	—	25	—	—	25
Shares issued in public offering, net of issuance costs	39,878,939	—	(3,408,369)	—	30,882	—	—	30,882
Net loss	—	—	—	—	—	—	(23,978)	(23,978)
Reclassification of cumulative translation adjustments to other income (expense), net	—	—	—	—	—	2,915	—	2,915
Other comprehensive income	—	—	—	—	—	7	—	7
Balances at September 30, 2024	292,869,097	$ —	—	$ —	$ 2,126,342	$ 13	$ (2,070,979)	$ 55,376

(Amounts in thousands, except share data)	Common Stock		Treasury Stock		Additional Paid-in Capital	Accumulated Other Comprehensive Income (Loss)	Accumulated Deficit	Total Shareholders' Equity
	Shares	Amount	Shares	Amount				
Balances at June 30, 2023	255,482,753	$ —	—	$ —	$ 2,080,348	$ (2,518)	$ (1,911,620)	$ 166,210
Stock-based compensation expense	—	—	—	—	2,306	—	—	2,306
Shares issued upon vesting of restricted stock units and for exercises of stock options	53,418	—	—	—	—	—	—	—
Shares issued for accrued compensation	862,356	—	—	—	—	—	—	—
Net loss	—	—	—	—	—	—	(19,795)	(19,795)
Other comprehensive loss	—	—	—	—	—	(1,043)	—	(1,043)
Balances at September 30, 2023	256,398,527	$ —	—	$ —	$ 2,082,654	$ (3,561)	$ (1,931,415)	$ 147,678

Precigen, Inc. and Subsidiaries
Condensed Consolidated Statements of Shareholders' Equity
(Unaudited)

(Amounts in thousands, except share data)	Common stock		Common Stock in treasury		Additional paid-in capital	Accumulated other comprehensive income (loss)	Accumulated deficit	Total Precigen shareholders' equity
	Shares	Amount	Shares	Amount				
Balances at December 31, 2023	248,919,096	$ —	7,479,431	$ —	$ 2,084,916	$ (1,947)	$ (1,964,471)	$ 118,498
Stock-based compensation expense	—	—	—	—	6,606	—	—	6,606
Shares issued upon vesting of RSUs and for exercises of stock options	1,514,394	—	(1,514,394)	—	346	—	—	346
Shares issued for accrued compensation	2,170,885	—	(2,170,885)	—	3,039	—	—	3,039
Shares issued as payment for services	385,783	—	(385,783)	—	553	—	—	553
Shares issued in public offering, net of issuance costs	39,878,939	—	(3,408,369)	—	30,882	—	—	30,882
Net loss	—	—	—	—	—	—	(106,508)	(106,508)
Reclassification of cumulative foreign currency translation adjustments to other income (expense), net	—	—	—	—	—	2,915	—	2,915
Other comprehensive loss	—	—	—	—	—	(955)		(955)
Balances at September 30, 2024	292,869,097	—	—	$ —	$ 2,126,342	$ 13	$ (2,070,979)	$ 55,376

(Amounts in thousands, except share data)	Common stock		Common Stock in treasury		Additional paid-in capital	Accumulated other comprehensive income (loss)	Accumulated deficit	Total Precigen shareholders' equity
	Shares	Amount	Shares	Amount				
Balances at December 31, 2022	208,150,021	$ —	—	$ —	$ 1,998,314	$ (3,488)	$ (1,868,567)	$ 126,259
Stock-based compensation expense	—	—	—	—	7,626	—	—	7,626
Shares issued upon vesting of RSUs	751,233	—	—	—	—	—	—	—
Shares issued for accrued compensation	3,068,825	—	—	—	3,361	—	—	3,361
Shares issued as payment for services	465,808	—	—	—	545	—	—	545
Shares and warrants issued in public offerings, net of issuance costs	43,962,640	—	—	—	72,808	—	—	72,808
Net loss	—	—	—	—	—	—	(62,848)	(62,848)
Other comprehensive loss	—	—	—	—	—	(73)	—	(73)
Balances at September 30, 2023	256,398,527	$ —	—	$ —	$ 2,082,654	$ (3,561)	$ (1,931,415)	$ 147,678

The accompanying notes are an integral part of these condensed consolidated financial statements.

Precigen, Inc. and Subsidiaries
Condensed Consolidated Statements of Cash Flows
(Unaudited)

(Amounts in thousands)	**Nine Months Ended September 30, 2024**	**2023**
Cash flows from operating activities		
Net loss	$ (106,508)	$ (62,848)
Adjustments to reconcile net loss to net cash used in operating activities:		
Depreciation and amortization	3,865	5,054
Gain on disposals of assets, net	(2)	(68)
Impairment of goodwill	1,630	—
Impairment of other noncurrent assets	32,915	—
Gain on debt retirement	—	(60)
Loss on reclassification of cumulative foreign currency translation adjustments	2,915	—
Amortization of discounts on investments, net	(732)	(1,294)
Stock-based compensation expense	6,606	7,626
Shares issued as payment for services	553	545
Accretion of debt discount and amortization of deferred financing costs	—	60
Deferred income taxes	(1,706)	(126)
Other noncash items	—	3
Changes in operating assets and liabilities:		
Receivables:		
Trade	423	(10)
Other	431	(267)
Prepaid expenses	(836)	(62)
Other assets	73	83
Accounts payable	2,337	(1,759)
Accrued compensation and benefits	1,338	3,620
Other accrued liabilities	(1,422)	(1,550)
Deferred revenue	112	484
Lease liabilities	(60)	80
Settlement and indemnification accruals	(1,862)	(675)
Net cash used in operating activities	(59,930)	(51,164)

The accompanying notes are an integral part of these condensed consolidated financial statements.

Precigen, Inc. and Subsidiaries
Condensed Consolidated Statements of Cash Flows
(Unaudited)

(Amounts in thousands)	**Nine Months Ended September 30,**	
	2024	**2023**
Cash flows from investing activities		
Purchases of investments	$ (74,845)	$ (153,698)
Sales and maturities of investments	126,994	137,748
Purchases of property, plant and equipment	(7,556)	(491)
Proceeds from sale of assets	60	61
Net cash provided by (used in) investing activities	44,653	(16,380)
Cash flows from financing activities		
Proceeds from issuance of shares, net of issuance costs	31,833	72,808
Payments of long-term debt and convertible notes, including cost to retire of $120 in 2023	—	(43,219)
Proceeds from stock option exercises	346	—
Net cash provided by financing activities	32,179	29,589
Effect of exchange rate changes on cash, cash equivalents, and restricted cash	(25)	(306)
Net increase (decrease) in cash, cash equivalents, and restricted cash	16,877	(38,261)
Cash, cash equivalents, and restricted cash		
Beginning of period	7,848	48,596
End of period	$ 24,725	$ 10,335
Supplemental disclosure of cash flow information		
Cash paid during the period for interest	$ 7	$ 1,159
Cash paid during the period for income taxes	4	—
Significant noncash activities		
Accrued compensation paid in equity awards	$ 3,039	$ 3,361
Purchases of property and equipment included in accounts payable and other accrued liabilities	733	772
Proceeds from sale of assets included in accounts receivable	—	16
Issuance costs included in accounts payable and other accrued liabilities	951	—

The following table provides a reconciliation of the cash, cash equivalents, and restricted cash balances as of September 30, 2024 and December 31, 2023 as shown above:

	September 30, 2024	**December 31, 2023**
Cash and cash equivalents	$ 24,725	$ 7,578
Restricted cash included in other assets	—	270
Cash, cash equivalents, and restricted cash	$ 24,725	$ 7,848

The accompanying notes are an integral part of these condensed consolidated financial statements.

Precigen, Inc. and Subsidiaries
Notes to the Condensed Consolidated Financial Statements
(Unaudited)
(Amounts in thousands, except share and per share data)

1. Organization

Precigen, Inc. ("Precigen"), a Virginia corporation, is a dedicated discovery and clinical-stage biopharmaceutical company advancing the next generation of gene and cell therapies with the overall goal of improving outcomes for patients with significant unmet medical needs. Precigen is leveraging its proprietary technology platforms to develop product candidates designed to target urgent and intractable diseases in its core therapeutic areas of immuno-oncology, autoimmune disorders, and infectious diseases. Precigen's primary operations are located in the State of Maryland.

Precigen also has two wholly owned operating subsidiaries: Precigen ActoBio, Inc. ("ActoBio"), and Exemplar Genetics, LLC, doing business as Precigen Exemplar ("Exemplar").

Precigen and its consolidated subsidiaries are hereinafter referred to as the "Company."

ActoBio utilizes a proprietary class of microbe-based biopharmaceuticals that enable expression and local delivery of disease-modifying therapeutics, with its primary operations located in Ghent, Belgium. As part of a continuing effort to strategically prioritize the application of resources to particular development efforts, during the second quarter of 2024, the Company initiated a shutdown of ActoBio's operations. This included the commencement of terminating leases and employees, and the disposition of certain of its assets and obligations with a focus on the preservation of ActoBio's intellectual property, which was completed during the third quarter of 2024. See Notes 6 and 7 for further discussion related to non-cash impairment charges recorded during the second quarter of 2024, and Note 10 for discussion of cumulative translation losses reclassified into operations in the third quarter of 2024 in relation to these activities. During the second quarter of 2024, the Company also recorded a charge related to employee severance and termination benefits of $2,100, paid during the third quarter of 2024, of which $1,700 is included in research and development expenses and $400 is included in selling, general and administrative expenses included in the accompanying condensed consolidated statement of operations for the nine months ended September 30, 2024.

In addition to the actions taken at ActoBio noted above, in August 2024 the Company also began undertaking a strategic prioritization of its clinical portfolio and streamlining of its resources, including a reduction of over 20% of its workforce, to focus on potential commercialization of the PRGN-2012 AdenoVerse® gene therapy for the treatment of recurrent respiratory papillomatosis (RRP). These strategic changes are designed to reduce required resources for non-priority programs and enable the Company to focus on pre-commercialization efforts on PRGN-2012, including supporting the submission of a rolling biologics license application (BLA) under an accelerated approval pathway anticipated in the fourth quarter of 2024, conducting a confirmatory clinical trial, and manufacturing commercial product. Additionally, the Company will continue the acceleration of commercial readiness efforts for a potential launch in 2025. As a result of the actions taken related to the reduction in its workforce, the Company recorded a charge related to employee severance and termination benefits of $1,639, of which $594 is included in research and development expenses and $1,045 is included in selling, general and administrative expenses included in the accompanying condensed consolidated statement of operations for the three and nine months ended September 30, 2024. During the third quarter of 2024, $837 of the $1,639 charge was paid, leaving a liability of $802 as of September 30, 2024, which is included in accrued compensation and benefits on the condensed consolidated balance sheet.

Exemplar is committed to enabling the study of life-threatening human diseases through the development of Yucatan MiniSwine preclinical research models and services. Exemplar's primary operations are located in the State of Iowa.

2. Summary of Significant Accounting Policies

Basis of Presentation

The accompanying condensed consolidated financial statements are unaudited and have been prepared in accordance with accounting principles generally accepted in the United States of America ("U.S. GAAP"). Certain information and footnote disclosures normally included in the Company's annual financial statements have been condensed or omitted. These interim condensed consolidated financial statements, in the opinion of management, reflect all normal recurring adjustments necessary for fair statement of the Company's financial position as of September 30, 2024 and results of operations and cash flows for the interim periods ended September 30, 2024 and 2023. The year-end condensed consolidated balance sheet data was derived from the Company's audited financial statements but does not include all disclosures required by U.S. GAAP. These interim financial results are not necessarily indicative of the results to be expected for the year ending December 31, 2024, or for any other future annual or interim period. The accompanying interim unaudited condensed consolidated financial statements should be read in conjunction with the audited consolidated financial statements and related notes thereto included in the Company's Annual Report on Form 10-K for the year ended December 31, 2023.

The accompanying condensed consolidated financial statements reflect the operations of Precigen and its majority-owned subsidiaries. All intercompany accounts and transactions have been eliminated.

Liquidity and Going Concern

During the nine months ended September 30, 2024, the Company incurred a net loss of $106,508 and used $59,930 of cash in our operations, and as of September 30, 2024, had an accumulated deficit of $2,070,979. The Company has incurred operating losses since its inception and management expects operating losses and negative cash flows from operations to continue for the foreseeable future and, as a result, the Company will require additional capital to fund its operations and execute its business plan. As discussed in Note 10, the Company raised $30,882 in net proceeds in a public offering of its common stock in August 2024, however, had no committed source of additional funding from either debt or equity financings. As of September 30, 2024, the Company had $28,631 in cash, cash equivalents and short-term investments. The Company is currently exploring a number of potential opportunities for future liquidity. The Company's current cash and investments position, including the proceeds received from the August 2024 offering, is not sufficient to fund the Company's planned operations through one year after the date the interim financial statements are issued and accordingly, there is substantial doubt about the Company's ability to continue as a going concern. The analysis used to determine the Company's ability to continue as a going concern does not include cash sources outside of the Company's direct control that management expects to be available within the next twelve months.

The Company’s ability to fund its operations on an ongoing basis is dependent upon the successful execution of management’s plans, which include raising additional capital in the near term. This additional capital could be raised through a combination of non-dilutive financings (including debt or royalty monetization financings, collaborations, strategic alliances, monetization of assets, marketing, distribution or licensing arrangements), dilutive financings (including equity and/or debt financings which may include an equity component) and, in the longer term, from revenue related to product sales, to the extent its product candidates receive marketing approval and can be commercialized. There can be no assurance that new financing or other transactions will be available to the Company on commercially acceptable terms, or at all. Also, any collaborations, strategic alliances, monetization of assets or marketing, distribution or licensing arrangement may require the Company to give up some or all of its rights to a product or technology, which in some cases may be at less than the full potential value of such rights. If the Company is unable to obtain additional capital, the Company will assess its capital resources and may be required to delay, reduce the scope of, or eliminate some or all of its operations, which may include research and development and clinical trials. This may have a material adverse effect on the Company’s business, financial condition, results of operations and ability to operate as a going concern.

These interim condensed consolidated financial statements have been prepared on a going concern basis and do not include any adjustments to the amounts and classification of assets and liabilities that may be necessary in the event the Company can no longer continue as a going concern.

Risks and Uncertainties

The Company is subject to a number of risks similar to those of other companies conducting high-risk, early-stage research and development of therapeutic product candidates. Principal among these risks are dependence on key individuals and intellectual property, competition from other products and companies, and the technical risks associated with the successful research, development, and clinical manufacturing of its and its collaborators' therapeutic product candidates.

Research and Development

The Company considers that regulatory requirements inherent in the research and development of new products preclude it from capitalizing such costs. Research and development expenses include salaries and related costs of research and development personnel, including stock-based compensation expense, costs to acquire technology rights, contract research organizations and consultants, facilities, materials and supplies associated with research and development projects as well as various laboratory studies. Costs incurred in conjunction with collaboration and licensing arrangements are included in research and development. Indirect research and development costs include depreciation, amortization, and other indirect overhead expenses.

The Company has research and development arrangements with third parties that include upfront and milestone payments. As of September 30, 2024 and December 31, 2023, the Company had research and development commitments with third parties that had not yet been incurred totaling $7,382 and $17,800, respectively. The commitments are generally cancellable by the Company by providing written notice at least sixty days before the desired termination date.

Cash and Cash Equivalents

All highly liquid investments with an original maturity of three months or less at the date of purchase are considered to be cash equivalents. Cash balances at a limited number of banks may periodically exceed insurable amounts. The Company believes that it mitigates its risk by investing in or through major financial institutions. Recoverability of investments is dependent upon the performance of the issuer.

Short-term Investments

As of September 30, 2024 and December 31, 2023 short-term investments include United States government debt and agency securities and certificates of deposit. The Company determines the appropriate classification as short-term or long-term at the time of purchase based on original maturities and management's reasonable expectation of sales and redemption. The Company reevaluates such classification at each balance sheet date.

Fair Value of Financial Instruments

Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. As such, fair value is a market-based measurement that should be determined based on assumptions that market participants would use in pricing an asset and liability. As a basis for considering such assumptions, the Company uses a three-tier fair value hierarchy that prioritizes the inputs used in its fair value measurements. The hierarchy gives the highest priority to unadjusted quoted prices in active markets for identical assets or liabilities (Level 1 measurements) and the lowest priority to unobservable inputs (Level 3 measurements). The three levels of the fair value hierarchy are as follows:

Level 1:	Quoted prices in active markets for identical assets and liabilities;
Level 2:	Other than quoted prices included in Level 1 inputs that are observable for the asset or liability, either directly or indirectly; and
Level 3:	Unobservable inputs for the asset or liability used to measure fair value to the extent that observable inputs are not available.

Net Loss per Share

Basic net loss per share is calculated by dividing net loss attributable to common shareholders by the weighted average shares outstanding during the period, without consideration of common stock equivalents. Diluted net loss per share is calculated by adjusting weighted average shares outstanding for the dilutive effect of common stock equivalents outstanding for the period, using the treasury-stock method and the if-converted method. For purposes of the diluted net loss per share calculation, shares to be issued pursuant to stock options, restricted stock units ("RSUs") and performance stock units ("PSUs") are considered to be common stock equivalents but are excluded from the calculation of diluted net loss per share because their effect would be anti-dilutive as described in the next paragraph. Therefore, basic and diluted net loss per share were the same for all periods presented. See Note 10 for further discussion of the Company's Share Lending Agreement, which was terminated on October 1, 2023.

The following potentially dilutive securities as of September 30, 2024 and 2023, have been excluded from the above computations of diluted weighted average shares outstanding for the three and nine months then ended as they would have been anti-dilutive:

	September 30,	
	2024	**2023**
Options	26,857,820	21,951,340
Restricted and performance stock units	3,804,057	961,534
Total	30,661,877	22,912,874

Segment Information

The Company's chief operating decision maker ("CODM") regularly reviews disaggregated financial information for various operating segments. The financial information regularly reviewed by the CODM consists of (i) Biopharmaceuticals and (ii) Exemplar, each an operating segment that was also determined to be a reportable segment. The Biopharmaceuticals reportable segment is primarily comprised of the Company's legal entities of Precigen and ActoBio. See Note 1 for a description of Precigen, ActoBio and Exemplar.

Use of Estimates

The preparation of financial statements in conformity with U.S. GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities, the disclosure of contingent assets and liabilities at the date of the financial statements, and the reported amounts of revenues and expenses during the reporting periods. Actual results could differ from those estimates.

Recently Issued Accounting Pronouncements Not Yet Adopted

In November 2023, the FASB issued ASU 2023-07, Segment Reporting—Improvements to Reportable Segment Disclosures. According to ASU 2023-07, public entities are required to disclose its significant segment expense categories and amounts for each reportable segment. A significant segment expense is an expense that is significant to the segment, regularly provided to or easily computed from information regularly provided to the chief operating decision maker and included in the reported measure of segment profit or loss. This updated standard is effective for public entities for fiscal years beginning after December 15, 2023, and interim periods in fiscal years beginning after December 15, 2024. We do not believe the adoption of ASU 2023-07 will have a material impact on our consolidated financial statements and disclosures.

There are no other new accounting standards which have not yet been adopted that are expected to have a significant impact on our financial statements and related disclosures.

3. Collaboration and Licensing Revenue

The Company's collaborations and licensing agreements may provide for multiple promises to be satisfied by the Company and typically include a license to the Company's technology platforms, participation in collaboration committees, and performance of certain research and development services. Based on the nature of the promises in the Company's collaboration and licensing agreements, the Company typically combines most of its promises into a single performance obligation because the promises are highly interrelated and not individually distinct. Options to acquire additional services are considered to determine if they constitute material rights. At contract inception, the transaction price is typically the upfront payment received and is allocated to the performance obligations. The Company has determined the transaction price should be recognized as revenue based on its measure of progress under the agreement primarily based on inputs necessary to fulfill the performance obligation.

The Company determines whether collaborations and licensing agreements are individually significant for disclosure based on a number of factors, including total revenue recorded by the Company pursuant to collaboration and licensing agreements, collaborators or licensees with equity method investments, or other qualitative factors. Collaboration and licensing revenues generated from consolidated subsidiaries are eliminated in consolidation.

There was no collaboration and licensing revenue recognized during both the three and nine months ended September 30, 2024 and 2023.

Alaunos License Agreement

On April 3, 2023, the Company entered into an amended and restated exclusive license agreement (the “License Agreement”), with Alaunos Therapeutics (“Alaunos”). The License Agreement amended and replaced an Exclusive License Agreement by and between the Company and Alaunos, dated October 5, 2018.

Pursuant to the terms of the License Agreement, the Company granted Alaunos an exclusive, worldwide, royalty-free, sub-licensable license to certain patents and know-how to research, develop and commercialize T-cell receptor products, which are referred to as TCR Products, designed for neoantigens for the treatment of cancer or the treatment and prevention of human papilloma virus, or HPV, to the extent that the primary reason for such treatment or prevention is to prevent cancer, which is referred to as the HPV Field. The Company has also granted Alaunos an exclusive, worldwide, royalty-free, sub-licensable license to certain patents relating to the Sleeping Beauty technology to research, develop and commercialize TCR Products (other than those designed for neoantigens) for the treatment of cancer and in the HPV Field. The Company also granted Alaunos certain non-exclusive rights to certain patents and know-how to research, develop and commercialize products developed under or arising from a program of research and development focused on NK cells and gamma delta T-cells in the HPV field. Alaunos had the exclusive right to conduct in its sole discretion, and is solely responsible for all aspects of, the research, development and commercialization of the licensed products for the treatment of cancer and was not subject to a diligence obligation with respect to such efforts.

On October 4, 2024, the License Agreement was terminated. Following the termination of the License Agreement, Precigen has regained all rights previously licensed to Alaunos and Alaunos retains no rights to utilize any of Precigen's technology.

Deferred Revenue

Deferred revenue primarily consists of upfront and milestone consideration received for the Company's collaboration and licensing agreements. Revenue is recognized as services are performed. The arrangements classified as long-term are not active while the respective counterparties evaluate the status of the project and its desired future development activities since the Company cannot reasonably estimate the amount of services, if any, to be performed over the next year.

Deferred revenue consisted of the following:

	September 30, 2024	December 31, 2023
Collaboration and licensing agreements	$ 1,818	$ 1,818
Prepaid product and service revenues	15	15
Other	606	494
Total	$ 2,439	$ 2,327
Current portion of deferred revenue	$ 407	$ 509
Long-term portion of deferred revenue	2,032	1,818
Total	$ 2,439	$ 2,327

4. Short-term Investments

The Company's investments are classified as available-for-sale. The following table summarizes the amortized cost, gross unrealized gains and losses, and fair value of available-for-sale investments as of September 30, 2024:

	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Aggregate Fair Value
U.S. government debt securities	$ 2,943	$ 8	$ —	$ 2,951
Certificates of deposit	950	5	—	955
Total	$ 3,893	$ 13	$ —	$ 3,906

In addition, at September 30, 2024 and December 31, 2023, the Company held U.S. government debt securities valued at $17,425 and $1,502, respectively, which was included in cash and cash equivalents in the condensed consolidated balance sheet as these investments had an original maturity of less than three months when purchased.

The estimated fair value of available-for-sale investments was $3,906 as of September 30, 2024, and these available-for-sale investments all contractually mature within one year.

The following table summarizes the amortized cost, gross unrealized gains and losses, and fair value of available-for-sale investments as of December 31, 2023:

	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Aggregate Fair Value
U.S. government debt securities	$ 51,704	$ 102	$ (135)	$ 51,671
Certificates of deposit	3,361	1	(1)	3,361
Corporate bonds	245	—	—	245
Total	$ 55,310	$ 103	$ (136)	$ 55,277

Changes in market interest rates and bond yields cause certain investments to fall below their cost basis, resulting in unrealized losses on investments. The Company does not intend to sell these investments nor is it more likely than not that the Company will be required to sell these investments, prior to maturity or recovery of amortized cost.

5. Fair Value Measurements

The carrying amount of cash and cash equivalents, receivables, accounts payable, accrued compensation and benefits, and other accrued liabilities approximate fair value due to the short maturity of these instruments.

Assets

The following table presents the placement in the fair value hierarchy of financial assets that are measured at fair value on a recurring basis as of September 30, 2024:

	Quoted Prices in Active Markets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	September 30, 2024
Assets				
U.S. government debt securities	$ —	$ 2,951	$ —	$ 2,951
Certificates of deposit	—	955	—	955
Total	$ —	$ 3,906	$ —	$ 3,906

The following table presents the placement in the fair value hierarchy of financial assets that are measured at fair value on a recurring basis as of December 31, 2023:

	Quoted Prices in Active Markets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	December 31, 2023
Assets				
U.S. government debt securities	$ —	$ 51,671	$ —	$ 51,671
Certificates of deposit	—	3,361	—	3,361
Corporate bonds	—	245	—	245
Total	$ —	$ 55,277	$ —	$ 55,277

The method used to estimate the fair value of the Level 2 short-term investments in the tables above is based on professional pricing sources for identical or comparable instruments, rather than direct observations of quoted prices in active markets.

6. Property, Plant and Equipment, Net

Property, plant and equipment consist of the following:

	September 30, 2024	December 31, 2023
Land and land improvements	$ 164	$ 164
Buildings and building improvements	2,629	2,629
Furniture and fixtures	364	530
Equipment	16,773	18,576
Leasehold improvements	4,475	4,380
Breeding stock	92	79
Computer hardware and software	3,190	3,459
Construction and other assets in progress	8,382	1,577
	36,069	31,394
Less: Accumulated depreciation and amortization	(22,531)	(24,283)
Property, plant and equipment, net	$ 13,538	$ 7,111

Depreciation expense was $356 and $434 for the three months ended September 30, 2024 and 2023, respectively, and $1,124 and $1,415 for the nine months ended September 30, 2024 and 2023, respectively.

As discussed in Note 1, during the second quarter of 2024, the Company suspended ActoBio's operations. As a result, the Company reviewed the related property, plant and equipment and right-of-use assets for impairment. Based on the estimated undiscounted cash flows, the Company determined that the related asset values were not fully recoverable and calculated estimated fair values using market participant assumptions. The estimated fair values were lower than the carrying values, and the Company recorded impairment losses of $110 related to property, plant, and equipment and $488 related to the right-of-use assets, which are included in impairment of other noncurrent assets in the accompanying condensed consolidated statements of operations for the nine months ended September 30, 2024.

7. Goodwill and Intangible Assets, Net

The changes in the carrying amount of goodwill for the nine months ended September 30, 2024 were as follows:

Balance at December 31, 2023	$ 26,612
Impairment	(1,630)
Foreign currency translation adjustments	(64)
Balance at September 30, 2024	$ 24,918

The Company had $26,503 and $24,873 of cumulative impairment losses as of September 30, 2024 and December 31, 2023, respectively.

During the second quarter of 2024, in connection with the suspension of ActoBio's operations, as discussed in Note 1, the Company determined the fair value of the ActoBio reporting unit was less than its carrying amount. As a result, the Company recorded a goodwill impairment charge of $1,630, which represented the full amount of goodwill associated with the ActoBio reporting unit.

Intangible assets consist of the following as of September 30, 2024:

	Gross Carrying Amount	Accumulated Amortization	Net
Patents, developed technologies and know-how	$ 15,912	$ (11,139)	$ 4,773

Intangible assets consist of the following as of December 31, 2023:

	Gross Carrying Amount	Accumulated Amortization	Net
Patents, developed technologies and know-how	$ 82,501	$ (41,800)	$ 40,701

During the second quarter of 2024 , in connection with the suspension of ActoBio's operations, the Company determined the fair value of ActoBio's certain developed technologies was less than their carrying amount. As a result, the Company recorded an impairment charge of $32,317, which is included in impairment of other noncurrent assets in the accompanying condensed consolidated statements of operations for the nine months ended September 30, 2024.

Amortization expenses were $318 and $1,217 for the three months ended September 30, 2024 and 2023, respectively, and $2,741 and $3,639 for the nine months ended September 30, 2024 and 2023.

8. Debt

Lines of Credit

Exemplar has a $5,000 revolving line of credit with a bank that was to mature on November 1, 2024. As of September 30, 2024, the line of credit bore interest at a stated rate of 8.50% per annum. As of September 30, 2024 and December 31, 2023, there was no outstanding balance on the line of credit. On October 31, 2024, the Company entered into a new $5,000 revolving line of credit, which bears interest of 8.0% per annum and matures on November 1, 2025.

Convertible Notes

In July 2018, Precigen completed a registered underwritten public offering of $200,000 aggregate principal amount of Convertible Notes and issued the Convertible Notes under an indenture between Precigen and The Bank of New York Mellon Trust Company, N.A., as trustee, as supplemented by the First Supplemental Indenture.

The Convertible Notes matured on July 1, 2023, although certain notes were repurchased prior to their maturity beginning in third quarter of 2022. On June 30, 2023, the Company repurchased all remaining outstanding Convertible Notes at par plus accrued interest.

The components of interest expense in 2023 related to the Convertible Notes were $397 of cash interest expense and $60 of non-cash interest expense for the nine months ended September 30, 2023.

9. Income Taxes

For the three and nine months ended September 30, 2024 and 2023, the Company calculated its tax benefit using the estimated annual effective tax rate method. The rate is the ratio of estimated annual income tax expense related to estimated pretax loss from continuing operations, excluding significant unusual or infrequently occurring items. As a result of the pretax losses anticipated for the full year which are not benefited, this rate has been calculated and applied to the year-to-date interim period’s ordinary income or loss on a jurisdiction by jurisdiction basis to determine the income tax expense/benefit allocated to the year-to-date period. The annual effective tax rate is revised, if necessary, at the end of each interim period based on the Company’s most current best estimate. The Company recorded an income tax expense of $12 and income tax benefit of $6 for the three months ended September 30, 2024 and 2023, respectively, and income tax benefit of $1,706 and $126 for the nine months ended September 30, 2024 and 2023, respectively. The effective tax rate differs from the U.S. statutory tax rate, primarily as a result of the change in valuation allowance required. The increase in tax benefit recognized in the nine months ended September 30, 2024 is primarily caused by the non-cash impairment of ActoBio's developed technology and goodwill, which resulted in the reduction of the associated deferred tax liability, and was recorded as a discrete item during the second quarter of 2024.

The Company's net deferred tax assets are offset by a valuation allowance due to the Company's history of net losses combined with an inability to confirm recovery of the tax benefits of the Company's tax attributes and other net deferred tax assets. In assessing the realizability of deferred tax assets, management considers whether it is more likely than not that some portion or all of the deferred tax assets will not be realized. The ultimate realization of deferred tax assets is dependent upon the generation of future taxable income during the periods in which those temporary differences become deductible. Management considers the scheduled reversal of deferred tax liabilities, projected future taxable income and tax planning strategies in making this assessment.

10. Shareholders' Equity

Issuances of Precigen Common Stock

In January 2023, the Company closed a public offering of 43,962,640 shares of its common stock, resulting in net proceeds of $72,808, after deducting underwriting discounts, fees, and other offering expenses. Of the 43,962,640 shares, 11,517,712 shares were purchased by related parties and their affiliates, including the Company's Chief Executive Officer, its Chairman of the Board of Directors and his affiliates, and certain other of the Company's officers.

The Company completed the offering of shares of common stock, utilizing a number of underwriters, with J.P. Morgan Securities LLC acting as representative of the underwriters. The services provided by JP Morgan Securities LLC were in the ordinary course of their role as lead underwriter, for which they received customary fees and commissions.

In August 2024, the Company closed a public offering of 39,878,939 shares of its common stock, resulting in net proceeds to the Company of $30,882, after deducting underwriting discounts, fees, and other offering expenses. This included the sale of 4,584,821 shares of the Company’s common stock pursuant to the underwriter’s exercise of its option to purchase additional shares. Of the 39,878,939 shares, 23,588,234 shares were purchased by related parties and their affiliates, including the Company's Chairman of the Board of Directors and his affiliates, and one of the Company's executive officers.

Share Lending Agreement

Concurrently with the offering of the Convertible Notes, Precigen entered into a share lending agreement (the "Share Lending Agreement") with J.P. Morgan Securities LLC (the "Share Borrower") pursuant to which Precigen loaned and delivered 7,479,431 shares of its common stock (the "Borrowed Shares") to the Share Borrower. The Share Lending Agreement terminated on October 1, 2023, and the Borrowed Shares were returned to Precigen on October 5, 2023.

The Share Lending Agreement was entered into at fair value and met the requirements for equity classification. Therefore, the value is netted against the issuance of the Borrowed Shares in additional paid-in capital. Additionally, the Borrowed Shares are not included in the denominator for loss per share attributable to Precigen shareholders.

Components of Accumulated Other Comprehensive Income (Loss)

The components of accumulated other comprehensive income (loss) are as follows:

	September 30, 2024	December 31, 2023
Unrealized gain (loss) on investments	$ 13	$ (33)
Loss on foreign currency translation adjustments	—	(1,914)
Total accumulated other comprehensive loss	$ 13	$ (1,947)

During the three and nine months ended September 30, 2024, the Company reclassified $2,915 of cumulative foreign translation losses associated with ActoBio upon final closing of our facilities during the quarter, which is included in other income (expenses) in the accompanying condensed consolidated statements of operations. These translation losses were previously recorded within accumulated other comprehensive income (loss).

11. Share-Based Payments

The Company measures the fair value of stock options, RSUs and PSUs issued to employees and nonemployees as of the grant date for recognition of stock-based compensation expense. Stock-based compensation expense for employees and nonemployees is recognized over the requisite service period, which is typically the vesting period and taking into account, if applicable, the probability of achievement of performance conditions.

In August 2024, the Compensation and Human Capital Management Committee of the Board of Directors (the "Compensation Committee") approved the grant of PSUs under the Company’s 2023 Omnibus Incentive Plan, as amended (the "2023 Plan"). During the three months ended September 30, 2024, the Company granted 2,978,000 PSUs to certain key employees of the Company, which are subject to the achievement of specified performance goals over a specified performance period. The PSUs will vest in two equal 50% installments based upon the achievement of two specified operational milestones relating to (i) the Company’s good faith submission to the U.S. Food and Drug Administration (the “FDA”) of a complete BLA for the Company’s PRGN-2012 investigational product and (ii) the approval of the BLA by the FDA, in each case during the period from the grant date through December 31, 2026 (the “Performance Period”).

The performance milestones may be achieved (and the PSUs earned) at any time during the Performance Period, and the PSUs will vest and be settled in shares of the Company’s common stock at such time as the Compensation Committee certifies that an applicable performance milestone has been achieved, subject to the employee's continued employment through the applicable achievement date (subject to certain expections). Any PSUs for which a performance milestone has not been achieved by the end of the Performance Period will be cancelled and forfeited.

The Company values the PSUs based on the grant date closing price per share of Company common stock. The Company recognizes stock-based compensation expense over the performance period, if it is probable that the performance condition will be achieved. Adjustments to stock-based compensation expense are made, as needed, each reporting period based on changes in the Company's estimate of the number of units that are probable of vesting.

As of September 30, 2024, the underlying performance milestone relating to the Company's submission of a BLA to the FDA was considered probable of achievement and stock-based compensation expense was recognized for the three and nine months ended September 30, 2024 related to this milestone. The underlying performance milestone related to the approval of the BLA by the FDA was determined to be not probable of achievement, as such approval is outside of the Company's control. Therefore, no stock-based compensation expense was recognized for the three and nine months ended September 30, 2024 related to this milestone.

Stock-based compensation costs included in the condensed consolidated statements of operations are presented below:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2024	2023	2024	2023
Cost of products and services	$ 10	$ 20	$ 29	$ 55
Research and development	558	579	2,005	1,666
Selling, general and administrative	1,493	1,707	4,572	5,905
Total	$ 2,061	$ 2,306	$ 6,606	$ 7,626

Precigen Equity Incentive Plans

In August 2013, Precigen adopted the 2013 Omnibus Incentive Plan (the "2013 Plan"), for employees and nonemployees which provided for grants of share-based awards, including stock options, RSUs, shares of common stock and other awards, to employees, officers, consultants, advisors, and nonemployee directors. Upon the effectiveness of the 2023 Plan in June 2023, no new awards may be granted under the 2013 Plan and any awards granted under the 2013 Plan prior to the effectiveness of the 2023 Plan will remain outstanding under such plan and will continue to vest and/or become exercisable in accordance with their original terms and conditions. As of September 30, 2024, there were 17,148,251 stock options and no RSUs outstanding under the 2013 Plan.

In April 2023, Precigen adopted the 2023 Plan, which became effective upon shareholder approval in June 2023. The 2023 Plan permits the grant of share-based awards, including stock options, restricted stock awards, RSUs, PSUs and other awards, to officers, employees and nonemployees. The 2023 Plan authorizes for issuance pursuant to awards under the 2023 Plan an aggregate of 18,418,137 shares, which included shares remaining available for issuance under the 2013 Plan as of the adoption of the 2023 Plan as well as an increase of 2,000,000 shares of common stock, which was approved by Precigen's shareholders at Precigen's annual meeting on July 5, 2024. As of September 30, 2024, there were 6,023,521 stock options, 2,978,000 PSUs and no RSUs outstanding under the 2023 Plan and 7,043,856 shares were available for future grants.

In April 2019, Precigen adopted the 2019 Incentive Plan for Non-Employee Service Providers (the "2019 Plan"), which became effective upon shareholder approval in June 2019. The 2019 Plan permits the grant of share-based awards, including stock options, restricted stock awards, and RSUs, to nonemployee service providers, including board members. As of September 30, 2024, there were 12,000,000 shares authorized for issuance under the 2019 Plan, of which 3,686,048 stock options and 826,057 RSUs were outstanding and 2,448,058 shares were available for future grants.

Stock option activity was as follows:

	Number of Shares	Weighted Average Exercise Price	Weighted Average Remaining Contractual Term (Years)
Balances at December 31, 2023	22,057,340	$ 6.90	7.12
Granted	7,230,174	1.41	
Exercised	(265,448)	1.30	
Forfeited	(1,027,459)	1.82	
Expired	(1,136,787)	16.74	
Balances at September 30, 2024	26,857,820	9.66	7.27
Exercisable at September 30, 2024	15,508,975	7.91	6.04

RSU and PSU activity was as follows:

	Number of Restricted Stock Units	Weighted Average Grant Date Fair Value	Weighted Average Remaining Contractual Term (Years)
Balances at December 31, 2023	961,534	$ 1.17	0.19
Granted	7,569,484	1.30	
Vested	(4,726,961)	1.37	
Balances at September 30, 2024	3,804,057	1.18	0.57

Precigen uses treasury shares (to the extent available) and authorized and unissued shares to satisfy share award exercises.

12. Operating Leases

The Company leases certain facilities and equipment under operating leases. Leases with a lease term of twelve months or less are considered short-term leases and are not recorded on the balance sheet, and expense for these leases is recognized over the term of the lease. All other leases have remaining terms of one to six years, some of which may include options to extend the lease and some of which may include options to terminate the lease within one year. The Company uses judgment to determine whether it is reasonably possible to extend the lease beyond the initial term or terminate before the initial term ends and the length of the possible extension or early termination. The leases are renewable at the option of the Company and do not contain residual value guarantees, covenants, or other restrictions.

The components of lease costs were as follows:

	Three Months Ended September 30,		Nine months ended September 30,	
	2024	2023	2024	2023
Operating lease costs	$ 337	$ 621	$ 1,555	$ 1,853
Short-term lease costs	11	11	46	41
Variable lease costs	92	89	276	295
Lease costs	$ 440	$ 721	$ 1,877	$ 2,189

As of September 30, 2024, maturities of lease liabilities, excluding short-term and variable leases, for continuing operations were as follows:

2024	$ 414
2025	1,556
2026	1,433
2027	1,285
2028	1,260
2029	1,295
Thereafter	553
Total	$ 7,796
Present value adjustment	(2,047)
Total	$ 5,749
Current portion of operating lease liabilities	$ 988
Long-term portion of operating lease liabilities	4,761
Total	$ 5,749

Other information related to operating leases in continuing operations was as follows:

	September 30, 2024	December 31, 2023
Weighted average remaining lease term (years)	4.99	5.39
Weighted average discount rate	11.6 %	11.2 %

	Nine Months Ended September 30,	
	2024	2023
Supplemental disclosure of cash flow information		
Cash paid for operating lease liabilities	$ 1,903	$ 1,769
Operating lease right-of-use assets obtained in exchange for new lease liabilities (includes new leases or modifications of existing leases)	572	399

13. Commitments and Contingencies

Contingencies

In October 2020, several shareholder class action lawsuits were filed in the United States District Court for the Northern District of California on behalf of certain purchasers of the Company's common stock. The complaints name as defendants the Company and certain of its current and former officers. The plaintiffs' claims challenged disclosures about the MBP program from May 10, 2017 to March 1, 2019. In March 2021, the Court granted an order consolidating the claims and, in April 2021, appointed a lead plaintiff and lead counsel in the case, captioned In *re Precigen Securities Litigation*, Case No. 5:20-cv-06936-BLF (N.D. Cal.). On May 18, 2021, the lead plaintiff filed an Amended Class Action Complaint. On August 2, 2021, the defendants moved to dismiss the Amended Class Action Complaint. On September 27, 2021, the lead plaintiff filed a Second Amended Class Action Complaint in lieu of a response to the defendants' motion to dismiss. On November 3, 2021, the defendants moved to dismiss the Second Amended Class Action Complaint and on May 31, 2022, the Court granted the defendants' motion to dismiss the Second Amended Class Action Complaint with leave to amend. On August 1, 2022, the lead plaintiff filed a Third Amended Class Action Complaint.

On August 2, 2022, the Court granted the parties' request to conduct a private mediation session to explore potential resolution of the action. On November 17, 2022, at the conclusion of the mediation session, the parties executed a memorandum of understanding that agreed in principle to resolve the claims asserted in the securities class action. The settlement provides for a payment to the plaintiff class of $13,000. As a result, the shareholder class action lawsuit was resolved. On November 6, 2023, the Court granted final approval of the settlement, dismissed the litigation with prejudice, and entered final judgment. As a result, the Company had no amounts recorded in settlement and indemnification accruals or an insurance receivable asset on the consolidated balance sheet as of September 30, 2024 and December 31, 2023, respectively.

In December 2020, a derivative shareholder action, captioned *Edward D. Wright, derivatively on behalf of Precigen, Inc. F/K/A Intrexon Corp. v. Alvarez et al*, was filed in the Circuit Court for Fairfax County in Virginia on behalf of Precigen, Inc. asserting similar claims under state law against Precigen's current directors and certain officers. The plaintiff seeks damages, forfeiture of benefits received by defendants, and an award of reasonable attorneys' fees and costs. The case was stayed by an order entered on June 14, 2021. On September 24, 2021, an individual shareholder filed a lawsuit in the Circuit Court for Henrico County styled *Kent v. Precigen*, Inc., Case CL21-6349. The *Kent* action demands inspection of certain books and records of the Company pursuant to Virginia statutory and common law. On April 1, 2022, the Court denied the demurrer and referred the matter to a hearing on the merits. The Company intends to defend the lawsuits vigorously; however, there can be no assurances regarding the ultimate outcome of these lawsuits.

In the course of its business, the Company is involved in litigation or legal matters, including governmental investigations. Such matters are subject to many uncertainties and outcomes are not predictable with assurance. The Company accrues liabilities for such matters when it is probable that future expenditures will be made and such expenditures can be reasonably estimated. As of September 30, 2024, the Company does not believe that any such matters, individually or in the aggregate, will have a material adverse effect on the Company's business, financial condition, results of operations, or cash flows.

Trans Ova

As part of the Company's strategic shift to becoming a healthcare company, in August 2022, the Company completed the sale of 100% of the issued and outstanding membership interests in its wholly-owned subsidiary, Trans Ova, to Spring Bidco LLC (the "Buyer"), a Delaware limited liability company for $170,000 and up to $10,000 in cash earn-out payments contingent upon the performance of Trans Ova in each of 2022 and 2023, consisting of $5,000 for each year (the "Transaction"). In February 2023, the Buyer notified the Company that Trans Ova did not meet the financial measures required in 2022 in order to require the first $5,000 earn-out payment. In April 2024, the Buyer notified the Company that Trans Ova did not meet the financial measures required in 2023 in order to require the second $5,000 earn-out payment. The Company has disputed certain items reflected in the 2023 financial measures presented by the Buyer in the aforementioned notification.

In connection with the Transaction, the Company is required to indemnify the Buyer for certain expenses incurred post close (related to covenants and certain additional specified liabilities including certain patent infringement lawsuits), if incurred, in amounts not to exceed $5,750. Such indemnification was recorded as a reduction of the gain on divestiture in the third quarter of 2023. As of September 30, 2024 and December 31, 2023, $3,213 and $5,750 were included in settlement and indemnification accruals on the condensed consolidated balance sheets, respectively, related to this indemnification liability. During the three months ended June 30, 2024, the Company paid an indemnification claim of $1,862 for expenses incurred by the buyer for the period from July 2023 to December 2023. In addition, during the three months ended September 30, 2023, the Company paid $675 for indemnification claims against this liability for the period from the date of sale to June 2023.

14. Segments

The Company's CODM assesses the operating performance of and allocates resources for several operating segments using Segment Adjusted EBITDA. Management believes this financial metric is a key indicator of operating results since it excludes noncash revenues and expenses that are not reflective of the underlying business performance of an individual enterprise. The Company defines Segment Adjusted EBITDA as net income (loss) before (i) interest expense and interest income, (ii) income tax expense or benefit, (iii) depreciation and amortization, (iv) stock-based compensation expense, (v) loss on settlement agreements where noncash consideration is paid, (vi) adjustments for accrued bonuses paid in equity awards, (vii) gain or loss on disposals of assets, (viii) loss on impairment of goodwill and other noncurrent assets, (ix) equity in net income loss of affiliates, (x) reclassification of cumulative translation gain (loss), and (xi) recognition of previously deferred revenue associated with upfront and milestone payments as well as cash outflows from capital expenditures and investments in affiliates, but includes proceeds from the sale of assets in the period sold. Segment Adjusted EBITDA excludes the gain or loss on disposals of assets and include proceeds from the sale of assets in the period sold.

Because the Company uses Segment Adjusted EBITDA as its primary measure of segment performance, it has included this measure in its discussion of segment operating results. The Company has also disclosed revenues from external customers and intersegment revenues for each reportable segment. The CODM does not use total assets by segment to evaluate segment performance or allocate resources, and accordingly, these amounts are not required to be disclosed.

For the three and nine months ended September 30, 2024, the Company's reportable segments were (i) Biopharmaceuticals and (ii) Exemplar. These identified reportable segments met the quantitative thresholds to be reported separately for the nine months ended September 30, 2024. See Note 1 for a description of Biopharmaceuticals and Exemplar.

Segment Adjusted EBITDA by reportable segment was as follows:

	Three Months Ended September 30, 2024	Three Months Ended September 30, 2023	Nine Months Ended September 30, 2024	Nine Months Ended September 30, 2023
Biopharmaceuticals	$ (19,235)	$ (16,437)	$ (70,629)	$ (55,034)
Exemplar	(159)	(464)	(842)	(426)
Segment Adjusted EBITDA for reportable segments	$ (19,394)	$ (16,901)	$ (71,471)	$ (55,460)

The table below reconciles Segment Adjusted EBITDA for reportable segments to consolidated net loss before income taxes:

	Three Months Ended September 30, 2024	Three Months Ended September 30, 2023	Nine Months Ended September 30, 2024	Nine Months Ended September 30, 2023
Segment Adjusted EBITDA for reportable segments	$ (19,394)	$ (16,901)	$ (71,471)	$ (55,460)
All Other Segment Adjusted EBITDA	—	—	$ —	—
Remove cash paid for capital expenditures, net of proceeds from sale of assets	822	175	7,496	430
Interest Income	283	856	1,210	2,316
Other expenses:				
Interest expense	(2)	(1)	(6)	(461)
Depreciation and amortization	(674)	(1,650)	(3,865)	(5,054)
Gain on disposals of assets	(1)	28	2	68
Impairment losses	—	—	(34,545)	—
Stock-based compensation expense	(2,061)	(2,306)	(6,606)	(7,626)
Adjustment related to accrued bonuses paid in equity awards	—	—	3,039	3,361
Shares issue for payment of services	(25)	—	(553)	(545)
Other	1	(2)	—	(3)
Reclassification of cumulative translation losses	(2,915)	—	$ (2,915)	—
Consolidated loss before income taxes	$ (23,966)	$ (19,801)	$ (108,214)	$ (62,974)

Revenues from external customers in the Exemplar segment consisted of $953 and $1,379 for the three months ended September 30, 2024 and 2023, respectively, and $2,735 and $4,997 for the nine months ended September 30, 2024 and 2023, respectively.

Total segment revenues from reportable segments equal total consolidated revenues on the condensed consolidated statements of operations.

For the three months ended September 30, 2024 and 2023, 63.0% and 78.7%, respectively, of total consolidated revenue was attributable to four customers in 2024 and four customer in 2023 in the Exemplar segment. For the nine months ended September 30, 2024 and 2023 63.4% and 78.2%, respectively, of total consolidated revenue was attributed to four customers in 2024 and four in 2023, in the Exemplar segment.

As of September 30, 2024 and December 31, 2023, the Company had $0 and $1,958, respectively, of long-lived assets in foreign countries. There were no revenues derived in foreign countries for any periods presented.

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

The following "Management's Discussion and Analysis of Financial Condition and Results of Operations" should be read in conjunction with the unaudited financial information and the notes thereto included in this Quarterly Report on Form 10-Q, or Quarterly Report, and our Annual Report on Form 10-K for the year ended December 31, 2023, or Annual Report.

The following discussion contains forward-looking statements that reflect our plans, estimates, expectations, and beliefs. Our actual results could differ materially from those discussed in the forward-looking statements and you are cautioned not to place undue reliance on forward-looking statements. Factors that could cause or contribute to these differences include those discussed below and elsewhere in this Quarterly Report, particularly in "Special Note Regarding Forward-Looking Statements" and "Risk Factors." The forward-looking statements included in this Quarterly Report are made only as of the date hereof.

Overview

We are a dedicated discovery and clinical-stage biopharmaceutical company advancing the next generation of gene and cell therapies with the overall goal of improving outcomes for patients with significant unmet medical needs. We are leveraging our proprietary technology platforms to develop product candidates designed to target urgent and intractable diseases in our core therapeutic areas of immuno-oncology, autoimmune disorders, and infectious diseases.

We believe that our array of technology platforms uniquely positions us among other biotechnology companies to advance precision medicine. Precision medicine is the practice of therapeutic product development that takes into account specific genetic variations within populations impacted by a disease to design targeted therapies to improve outcomes for a disease or patient population. Our proprietary and complementary technology platforms provide a strong foundation to realize the core promise of precision medicine by supporting our efforts to construct powerful gene programs to drive efficacy, deliver these programs through viral, non-viral, and microbe-based approaches to drive lower costs, and control gene expression to drive safety. Our therapeutic platforms, including UltraCAR-T, AdenoVerse immunotherapy, and ActoBiotics, are designed to allow us to precisely control the level and physiological location of gene expression and modify biological molecules to control the function and output of living cells to treat underlying disease conditions. In addition, we have developed a proprietary electroporation device, UltraPorator, designed to further streamline and ensure the rapid and cost-effective manufacturing of UltraCAR-T therapies. UltraPorator has received FDA clearance for manufacturing UltraCAR-T cells in clinical trials, and we have dosed patients manufactured UltraCAR-T cells using UltraPorator in our clinical trials.

Our clinical pipeline includes PRGN-2012 and PRGN-2009, which are based on our AdenoVerse immunotherapy platform; and PRGN-3005, PRGN-3006 and PRGN-3007, which are built on our UltraCAR-T platform. We have completed enrollment in the Phase 1b clinical trial of PRGN-3006. In addition, we have completed a Phase 1b/2a study of AG019, which is built on our ActoBiotics platform, which we have completed the shut-down of, as discussed below under our Biopharmaceuticals segment (Precigen ActoBio, Inc.).

In August 2024, we announced strategic prioritization of our pipeline to focus on development of our lead program, PRGN-2012. We plan to minimize UltraCAR-T spend and focus on strategic partnerships to further advance UltraCAR-T programs. As part of this restructuring, we have paused enrollment in PRGN-3005 and PRGN-3007 UltraCAR-T clinical trials. In addition, we plan to continue PRGN-2009 Phase 2 clinical trials under a cooperative research and development agreement ("CRADA") with the National Cancer Institute ("NCI") in recurrent/metastatic cervical cancer and in newly diagnosed HPV-associated oropharyngeal cancer. We do not plan to enroll patients in PRGN-2009 cervical cancer trial at non-NCI clinical sites. We have reduced our focus on preclinical programs, while continuing select projects that we believe could provide further near-term validation of our technology platforms. We have completed the shutdown of our ActoBio subsidiary operations, including the elimination of all ActoBio personnel. In conjunction with this shutdown, ActoBio's portfolio of intellectual property is available for prospective transactions.

These strategic changes will enable us to focus on pre-commercialization efforts on PRGN-2012, including supporting submission of a rolling BLA under an accelerated approval pathway, conducting the confirmatory clinical trial, and manufacturing of commercial product. Additionally, we will continue acceleration of commercial readiness efforts for a potential launch.

Our Biopharmaceuticals reportable segment is primarily comprised of the Company's legal entities of Precigen and ActoBio. Our Exemplar reportable segment is comprised of Exemplar Genetics LLC, doing business as Precigen Exemplar, or Exemplar, our wholly owned subsidiary focused on developing research models and services for healthcare research applications.

Biopharmaceuticals

Precigen

We are developing therapies built on our "off-the-shelf" AdenoVerse immunotherapy platform and our UltraCAR-T therapeutics platform. Our AdenoVerse immunotherapy platform utilizes a library of proprietary adenovectors for the efficient gene delivery of therapeutic effectors, immunomodulators, and vaccine antigens. We have established proprietary manufacturing cell lines and production methodologies from our AdenoVerse immunotherapy platform, which we believe are scalable for commercial supply. We believe that our proprietary gorilla adenovectors, part of the AdenoVerse technology, have superior performance characteristics as compared to current competition, including standard human adenovirus serotype 5, rare human adenovirus types and other non-human primate adenovirus types.

Through our UltraCAR-T therapeutics platform, we are able to precision-engineer UltraCAR-T cells to produce a homogeneous cell product that simultaneously expresses antigen-specific chimeric antigen receptor, or CAR, kill switch, and our proprietary membrane-bound interleukin-15, or mbIL15, genes in any genetically modified UltraCAR-T cell. Our decentralized and rapid proprietary manufacturing process allows us to manufacture UltraCAR-T cells overnight at a medical center's current good manufacturing practices facility, or cGMP, and reinfuse the patient the following day after gene transfer. This process improves upon current approaches to CAR-T manufacturing, which require extensive *ex vivo* expansion following viral vector transduction to achieve clinically relevant cell numbers that we believe can result in the exhaustion of CAR-T cells prior to their administration, limiting their potential for persistence in patients. We have developed a proprietary electroporation device, UltraPorator, designed to further streamline and ensure the rapid and cost-effective manufacturing of UltraCAR-T therapies. The UltraPorator system includes proprietary hardware and software solutions and potentially represents major advancements over current electroporation devices by significantly reducing the processing time and contamination risk. UltraPorator is intended to be a viable scale-up and commercialization solution for decentralized UltraCAR-T manufacturing.

PRGN-2012 is a first-in-class, investigational "off-the-shelf" AdenoVerse immunotherapy for the treatment of recurrent respiratory papillomatosis, or RRP. PRGN-2012 is an innovative therapeutic vaccine with optimized antigen design that uses our gorilla adenovector technology, part of our proprietary AdenoVerse platform, to elicit immune responses directed against cells infected with HPV6 and HPV11. We have completed the primary endpoint evaluation of the Phase 1/2 clinical trial. PRGN-2012 Phase 1/2 pivotal trial data were presented at the 2024 American Society of Clinical Oncology (ASCO) Annual Meeting in June 2024. We have announced that the FDA has agreed that the Phase 1/2 clinical trial of PRGN-2012 will serve as pivotal for the purpose of filing an accelerated approval request for licensure. PRGN-2012 has been granted Breakthrough Therapy Designation and Orphan Drug designation for the treatment of RRP by the FDA. PRGN-2012 has received Orphan Drug Designation for the Treatment of RRP from the European Commission as well. We plan to submit a BLA under an accelerated approval pathway in the fourth quarter of 2024. We are preparing for commercial readiness for a potential launch, if approved, of PRGN-2012 in 2025.

PRGN-2009 is a first-in-class, "off-the-shelf" investigational immunotherapy designed to activate the immune system to recognize and target human papillomavirus-positive, or HPV+, solid tumors. PRGN-2009 leverages our UltraVector and AdenoVerse platforms to optimize HPV type 16 and HPV type 18, antigen designed for delivery via a proprietary gorilla adenovector with a large genetic payload capacity and the ability for repeat administrations. We have completed a Phase 1 clinical trial of PRGN-2009 as a monotherapy or in combination with bintrafusp alfa, or M7824, an investigational bifunctional fusion protein, for patients with HPV-associated cancers in collaboration with the National Cancer Institute, or NCI, pursuant to a cooperative research and development arrangement, or CRADA. A Phase 2 clinical trial of PRGN-2009 in combination with pembrolizumab in newly diagnosed oropharyngeal squamous cell carcinoma patients is ongoing in collaboration with the NCI pursuant to a CRADA. In addition, a Phase 2 randomized-controlled clinical trial of PRGN-2009 in combination with pembrolizumab to treat patients with recurrent or metastatic cervical cancer is ongoing pursuant to a CRADA. As part of the strategic prioritization of our pipeline announced in August 2024, we plan to enroll patients in the PRGN-2009 clinical trials only at NCI under a CRADA.

PRGN-3006 is a first-in-class, investigational autologous CAR-T therapy that utilizes our UltraCAR-T platform to express a CAR to target CD33 (Siglec-3), mbIL15 and a kill switch gene. PRGN-3006 is in a Phase 1/1b clinical trial for the treatment of relapsed or refractory, or r/r, acute myeloid leukemia, or AML, and high-risk myelodysplastic syndromes, or MDS. PRGN-3006 has been granted Fast Track designation in patients with r/r AML by the FDA. Previously PRGN-3006 was granted Orphan Drug Designation in patients with AML by the FDA. We have completed the Phase 1 dose escalation trial. We have completed enrollment of the Phase 1b trial for PRGN-3006 in AML and are planning for an end of Phase 1b meeting with the FDA.

PRGN-3005 is a first-in-class, investigational autologous CAR-T therapy that utilizes our UltraCAR-T platform to simultaneously express a CAR targeting the unshed portion of the Mucin 16 antigen, mbIL15, and kill switch genes. PRGN-3005 is in a Phase 1/1b clinical trial for the treatment of advanced, recurrent platinum-resistant ovarian, fallopian tube, or primary peritoneal cancer. We have completed enrollment in the Phase 1 dose escalation cohorts of the intraperitoneal (IP) and intravenous (IV) arms without lymphodepletion as well as in the lymphodepletion cohort in the IV arm. As part of the strategic prioritization of our pipeline announced in August 2024, we have paused enrollment in the Phase 1b clinical trial of PRGN-3005.

PRGN-3007 is a first-in-class, investigational autologous CAR-T therapy that utilizes the next generation UltraCAR-T platform to express a CAR which targets ROR1, mbIL15, a kill switch, and a novel mechanism for the intrinsic blockade of the programmed death 1, or PD-1, gene expression. PRGN-3007 is in a Phase 1/1b clinical trial for patients with advanced receptor tyrosine kinase-like orphan receptor 1-positive, or ROR1^{+}, hematological (Arm 1) and solid tumors (Arm 2). The target patient population for Arm 1 includes relapsed or refractory CLL, relapsed or refractory MCL, relapsed or refractory B-ALL, and relapsed or refractory DLBCL. The target patient population for Arm 2 includes locally advanced unresectable or metastatic histologically confirmed TNBC. The study is designed to enroll in two parts: an initial 3+3 dose escalation in each arm followed by a dose expansion at the maximum tolerated dose. As part of the strategic prioritization of our pipeline announced in August 2024, we have paused enrollment in the Phase 1 clinical trial of PRGN-3007.

Precigen ActoBio, Inc.

ActoBio utilizes a proprietary class of microbe-based biopharmaceuticals, referred to as ActoBiotics, that enable expression and local delivery of disease-modifying therapeutics. Our ActoBiotics platform is a unique delivery platform precisely tailored for specific disease modification with the potential for superior efficacy and safety.

AG019, is a disease modifying antigen-specific, investigational immunotherapy for the prevention, delay, or reversal of type 1 diabetes mellitus, or T1D. We have completed a Phase 1b/2a clinical trial of AG019 for the treatment of early-onset T1D. The Phase 1b portion of the study evaluated the safety and tolerability of AG019 monotherapy administered both as a single dose and as repeated daily doses in adult and adolescent patients. The Phase 2a double-blind portion of the study investigated the safety and tolerability of AG019 in combination with teplizumab, or PRV-031. The primary endpoint of assessing safety and tolerability in both the Phase 1b AG019 monotherapy and the Phase 2a AG019 combination therapy were met.

Into the second quarter of 2024, we operated ActoBio as a standalone subsidiary comprising our ActoBio reporting unit, which included our associated technologies, personnel, and facilities. We previously announced our continued effort to strategically prioritize our application of resources to particular development efforts. During the second quarter of 2024, we suspended ActoBio's operations and began the process to wind down ActoBio's activities. This included the commencement of terminating leases and employees, and the disposition of certain of its assets and obligations with a focus on the preservation of ActoBio's intellectual property, which will be made available for prospective transactions. We recorded non-cash impairment charges of $34.5 million during the second quarter of 2024 related to the write-down of goodwill, property and equipment, and right-of-use assets to their net realizable values. In addition, we recorded a tax benefit of $1.7 million related to these impairment charges. The Company also recorded a charge related to employee severance and termination benefits of $2.1 million, which were paid in the third quarter of 2024. We continue to assess potential next steps with respect to the future of the ActoBio programs and intellectual property. See "Notes to the Condensed Consolidated Financial Statements (Unaudited) - Note 1, 6 and 7" appearing elsewhere in the Quarterly Report for further discussion, including discussion related to impairment and employee severance and termination charges of ActoBio.

Precigen Exemplar

Exemplar is committed to enabling the study of life-threatening human diseases through the development of Yucatan MiniSwine miniature preclinical research models and services. Historically, researchers have lacked animal models that faithfully represent human diseases. As a result, a sizeable barrier has blocked progress in the discovery of human disease mechanisms; novel diagnostics, procedures, devices, prevention strategies and therapeutics; as well as the ability to predict in humans the efficacy of next-generation procedures, devices, and therapeutics. Exemplar's MiniSwine models are genetically engineered to exhibit a wide variety of human disease states, which provides a more accurate platform to test the efficacy of new medications and devices.

Segments

As of September 30, 2024, our reportable segments were (i) Biopharmaceuticals and (ii) Exemplar. These identified reportable segments met the quantitative thresholds to be reported separately for the nine months ended September 30, 2024.

Financial overview

We have incurred significant losses since our inception. We anticipate that we may continue to incur significant losses in the foreseeable future, and we may never achieve or maintain profitability. Our historical collaboration and licensing revenues were generated under a business model from which we have gradually transitioned, and we do not expect to expend significant resources servicing our historical collaborations in the future. We may enter into strategic transactions for individual platforms or programs in the future from which we may generate new collaboration and licensing revenues. We continue to generate product and service revenues through our Exemplar subsidiary. Products currently in our clinical pipeline will require regulatory approval and/or commercial scale-up before they may commence significant product sales and operating profits.

As we continue our efforts to focus our business and generate additional capital, we may be willing to enter into transactions involving one or more of our operating segments and reporting units for which we have goodwill and intangible assets. These efforts could result in us identifying impairment indicators or recording impairment charges in future periods. In addition, market changes and changes in judgements, assumptions, and estimates that we have made in assessing the fair value of goodwill could cause us to consider some portion or all of certain assets to become impaired.

See further discussion regarding our ability to continue as a going concern below under the future capital requirements section on Item 2.

Sources of revenue

Our primary current revenues arise from Exemplar, which generates product and service revenues through the development and sale of genetically engineered miniature swine models. We recognize revenue when control of the promised product or service is transferred to the customer.

As we have shifted our focus to our healthcare business, we have and may continue to mutually terminate historical collaboration agreements or repurchase rights to the exclusive fields from collaborators, relieving us of any further performance obligations under the agreement. Upon such circumstances or when we determine no further performance obligations are required of us under an agreement, we may recognize any remaining deferred revenue as either collaboration revenue or as a reduction of operating expense, depending on the circumstances. See "Notes to the Consolidated Financial Statements (Unaudited) - Note 3" appearing elsewhere in this Quarterly Report for a discussion of changes to our significant collaborations.

In future periods, in connection with our focus on healthcare, our revenues will primarily depend on our ability to advance and create our own programs and the extent to which we bring products enabled by our technologies to market. Other than for collaboration revenues recognized upon cancellation or modification of an existing collaboration or for revenues generated pursuant to future strategic transactions for any of our existing platforms or programs, we expect our collaboration revenues will continue to decrease in the near term, although if any new collaboration agreements or strategic transactions are entered into, revenue could be positively impacted. Our revenues will also depend upon our ability to maintain or improve the volume and pricing of Exemplar's current product and service offerings and to develop and scale up production of new offerings from the various technologies of Exemplar. As we focus on our healthcare business, we anticipate that our expenses will increase substantially if, and as, we continue to advance the preclinical and clinical development of our existing product candidates and our research programs. We expect a significant period of time could pass before commercialization of our various product candidates or before the achievement of contractual milestones and the realization of royalties on product candidates commercialized under our collaborations. Accordingly, there can be no assurance as to the timing, magnitude, and predictability of revenues, if any, to which we might be entitled.

Cost of products and services

Cost of products and services, all which are related to our Exemplar reporting segment, includes primarily labor and related costs, drugs and supplies, feed used in production, and facility charges, including rent and depreciation. Fluctuations in the price of livestock and feed have not had a significant impact on our operating margins and no derivative financial instruments are used to mitigate the price risk.

Research and development expenses

We recognize research and development expenses as they are incurred. Our research and development expenses consist primarily of:

- salaries and benefits, including stock-based compensation expense and severance benefits, for personnel in research and development functions;

- fees paid to consultants and contract research organizations who perform research on our behalf and under our direction;
- costs related to laboratory supplies used in our research and development efforts and acquiring, developing, and manufacturing preclinical study and clinical trial materials;
- costs related to certain in-licensed technology rights or in-process research and development;
- amortization of patents and related technologies acquired in mergers and acquisitions; and
- facility-related expenses, which include direct depreciation costs and expenses for rent and maintenance of facilities and other operating costs.

Our research and development expenses are generally incurred by our reportable segments and primarily relate to either costs incurred to expand or otherwise improve our technologies or the costs incurred to develop our own products and services. Prior to August 2024, our Biopharmaceuticals segment was progressing preclinical and clinical programs that targeted urgent and intractable diseases in our core therapeutic areas of immuno-oncology, autoimmune disorders, and infectious diseases, including PRGN-3005, PRGN-3006, PRGN-3007, PRGN-2009, AG019 and PRGN-2012. As discussed above in the Overview, in August 2024, we announced a strategic prioritization of our clinical portfolio and streamlining of resources, to focus on potential commercialization of the PRGN-2012 AdenoVerse® gene therapy for the treatment of RRP. Our Exemplar segment's research and development activities relate to new and improved pig research models. The following table summarizes our research and development expenses incurred by reportable segment and reconciles those expenses to research and development expenses on the condensed consolidated statements of operations for the three and nine months ended September 30, 2024 and 2023.

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2024	2023	2024	2023
Biopharmaceuticals	$ 11,347	$ 11,517	$ 41,240	$ 35,411
Exemplar	23	66	72	209
Total consolidated research and development expenses	$ 11,370	$ 11,583	$ 41,312	$ 35,620

In addition to the strategic prioritization, the amount of research and development expenses may be impacted by, among other things, the number and nature of our own proprietary programs, and the number and size of programs we may support on behalf of collaboration agreements.

Selling, general and administrative expenses

Selling, general and administrative, or SG&A, expenses consist primarily of salaries and related costs, including stock-based compensation expense and severance benefits, for employees in executive, operational (including commercialization), finance, information technology, legal, and corporate communications functions. Other significant SG&A expenses include rent and utilities, insurance, accounting, and legal services (including the cost of settling any claims and lawsuits), and expenses associated with obtaining and maintaining our intellectual property.

SG&A expenses may fluctuate in the future depending on the scaling of our corporate functions required to support our corporate initiatives, the strategic prioritization, the build-up of our commercialization efforts and the outcomes of legal claims and assessments against us.

Other income (expense), net

Other income consists of gain on convertible debt retirement (for 2023) and interest earned on our cash and cash equivalents and short-term and long-term investments, which may fluctuate based on amounts invested and current interest rates.

Other expense consisted primarily of interest on our Convertible Notes, which were fully retired in the second quarter of 2023, and the reclassification of cumulative foreign translation losses due to closing operations in ActoBio in the third quarter of 2024. See "Notes to the Condensed Consolidated Financial Statements (Unaudited) - Note 8" and "Notes to the Condensed

Consolidated Financial Statements (Unaudited) - Note 10" appearing elsewhere in this Quarterly Report for further discussion on Convertible Notes and reclassification of cumulative foreign translation losses, respectively.

Segment performance

We use Segment Adjusted EBITDA as our primary measure of segment performance. We define Segment Adjusted EBITDA as net income (loss) before (i) interest expense and interest income, (ii) income tax expense or benefit, (iii) depreciation and amortization, (iv) stock-based compensation expense, (v) loss on settlement agreements where noncash consideration is paid, (vi) adjustments for accrued bonuses paid in equity awards, (vii) gain or loss on disposals of assets, (viii) loss on impairment of goodwill and other noncurrent assets, (ix) equity in net income (loss) of affiliates, (x) reclassification of cumulative translation gain (loss), and (xi) recognition of previously deferred revenue associated with upfront and milestone payments as well as cash outflows from capital expenditures and investments in affiliates, but includes proceeds from the sale of assets in the period sold. See "Notes to the Condensed Consolidated Financial Statements (Unaudited) - Note 14" appearing elsewhere in this Quarterly Report for further discussion of Segment Adjusted EBITDA.

Results of operations

Comparison of the three months ended September 30, 2024 and the three months ended September 30, 2023

The following table summarizes our results of operations for the three months ended September 30, 2024 and 2023, together with the changes in those items in dollars and as a percentage:

	Three Months Ended September 30,		Dollar Change	Percent Change
	2024	2023		
	(In thousands)			
Product revenues	$ 66	$ 82	$ (16)	(19.5)%
Service revenues	886	1,296	(410)	(31.6)%
Other revenues	1	1	—	— %
Total revenues	953	1,379	(426)	(30.9)%
Operating expenses				
Cost of product and services	1,009	1,537	(528)	(34.4)%
Research and development	11,370	11,583	(213)	(1.8)%
Selling, general and administrative	9,836	9,196	640	7.0 %
Total operating expenses	22,215	22,316	(101)	(0.5)%
Operating loss	(21,262)	(20,937)	(325)	1.6 %
Total other income (expense), net	(2,704)	1,136	(3,840)	>(200)%
Loss before income taxes	(23,966)	(19,801)	(4,165)	21.0 %
Income tax benefit (expense)	(12)	6	(18)	>(200)%
Net loss	$ (23,978)	$ (19,795)	$ (4,183)	21.1 %

Product and service revenues

Product and service revenues decreased $0.4 million, or 31%, compared to the three months ended September 30, 2023. This decrease was related to reductions in product and service revenues at Exemplar.

Cost of product and services

Cost of product and services decreased primarily as a result of decreased revenues at Exemplar.

Research and development expenses

Research and development expenses decreased by $0.2 million, or 2%, compared to the three months ended September 30, 2023. The decrease was the result of a $2.0 million decrease in costs associated with ActoBio, including depreciation and amortization and personnel and operating costs, resulting from the shutdown of operations during the second quarter of 2024 as well as lower costs of $0.7 million incurred at contract research organizations for other programs compared to the same period in 2023. These decreases were offset by increased costs of approximately $2.5 million including those associated with PRGN-2012 in advance of our planned BLA submission and our ongoing confirmatory trial, as well as increased personnel costs associated with severance incurred related to the Precigen workforce reduction in the third quarter of 2024.

Selling, general and administrative expenses

SG&A expenses increased by $0.6 million, or 7%, compared to the three months ended September 30, 2023. This increase was primarily due to severance costs incurred related to the Precigen workforce reduction, as well as increased costs associated with PRGN-2012 commercial readiness. These increases were partially offset by a reduction in insurance rates and legal expenses compared to the prior year period.

Other income (expense), net

Other income (expense), net decreased by $3.8 million, or >(200)%, compared to the three months ended September 30, 2023. This decrease was primarily due to the reclassification of cumulative translation losses of $2.9 million in the third quarter of 2024 as a result of the final closing of the ActoBio facilities, and a $0.6 million reduction in interest income.

Segment performance

The following table summarizes Segment Adjusted EBITDA, which is our primary measure of segment performance, for the three months ended September 30, 2024 and 2023, for each of our reportable segments.

	Three Months Ended September 30,		Dollar Change	Percent Change
	2024	2023		
	(In thousands)			
Segment Adjusted EBITDA:				
Biopharmaceuticals	$ (19,235)	$ (16,437)	$ (2,798)	(17.0)%
Exemplar	(159)	(464)	305	65.7 %

For a reconciliation of Segment Adjusted EBITDA to net loss from continuing operations before income taxes, see "Notes to the Condensed Consolidated Financial Statements (Unaudited) - Note 14" appearing elsewhere in this Quarterly Report.

The following table summarizes revenues from external customers for the three months ended September 30, 2024 and 2023, for our one reportable segment for which revenue exists.

	Three Months Ended September 30, 2024	Three Months Ended September 30, 2023	Dollar Change	Percent Change
	(In thousands)			
Exemplar	$ 953	$ 1,379	$ (426)	(30.9)%

Biopharmaceuticals

Segment Adjusted EBITDA loss increased compared to the prior period. This was primarily due to costs incurred related to the Precigen workforce reduction and the previously announced departure of one of the Company's executive officers, as well as higher fees paid to contract research organizations related to PRGN-2012 confirmatory clinical trial and professional fees incurred in advance of our anticipated BLA submission, offset by lower costs incurred at contract research organizations for other programs compared to the prior period. Capital expenditures were also higher in the current period due to the build-out of our manufacturing facility for PRGN-2012.

Exemplar

Revenues for Exemplar decreased due to a decrease in services performed resulting from a lower demand from existing customers. The decline in Segment Adjusted EBITDA was primarily due to the decreased revenues.

Comparison of the nine months ended September 30, 2024 and the nine months ended September 30, 2023

The following table summarizes our results of operations for the nine months ended September 30, 2024 and 2023, together with the changes in those items in dollars and as a percentage:

	Nine Months Ended September 30, 2024	Nine Months Ended September 30, 2023	Dollar Change	Percent Change
	(In thousands)			
Product revenues	$ 235	$ 730	$ (495)	(67.8)%
Service revenues	2478	4,261	(1,783)	(41.8)%
Other revenues	22	6	16	>200%
Total revenues	2,735	4,997	(2,262)	(45.3)%
Operating expenses				
Cost of product and services	3,098	4,761	(1,663)	(34.9)%
Research and development	41,312	35,620	5,692	16.0 %
Selling, general and administrative	30,293	30,150	143	0.5 %
Impairment of goodwill	1,630	—	1,630	N/A
Impairment of other noncurrent assets	32,915	—	32,915	N/A
Total operating expenses	109,248	70,531	38,717	54.9 %
Operating loss	(106,513)	(65,534)	(40,979)	62.5 %
Total other income (expense), net	(1,701)	2,560	(4,261)	(166.4)%
Loss before income taxes	(108,214)	(62,974)	(45,240)	71.8 %
Income tax benefit	1,706	126	1,580	>200%
Net loss	$ (106,508)	$ (62,848)	$ (43,660)	69.5 %

Product and service revenues

Product and service revenues decreased $2.3 million, or 46%, compared to the nine months ended September 30, 2023. This decrease was related to reductions in product and service revenues at Exemplar.

Cost of product and services

Cost of product and service decreased primarily as a result of decreased revenues at Exemplar and cost reduction initiatives implemented at Exemplar.

Research and development expenses

Research and development expenses increased $5.7 million, or 16%, compared to the nine months ended September 30, 2023. The increase was primarily the result of $4.4 million of increased costs associated with PRGN-2012 in advance of our planned BLA submission, including the start of the PRGN-2012 confirmatory clinical trial and close out of the PRGN-2012 pivotal clinical trial activities and professional fees incurred related to our manufacturing facility. Additionally, salaries, benefits, and other personnel costs increased by $3.0 million due to an increase in the hiring of employees related to the advancement of PRGN-2012 in the third and fourth quarters of 2023 and severance charges incurred related to the Precigen workforce reduction in the third quarter of 2024.

These increases were offset by lower costs of $1.6 million incurred at contract research organizations for other programs compared to the same period in 2023 as well as a $0.2 million reduction in total ActoBio operating expenses compared to the same period in 2023.

Selling, general and administrative expenses

SG&A expenses increased by $0.1 million, or 1%, compared to the nine months ended September 30, 2023. This increase was primarily due to higher severance costs associated with the suspension of ActoBio's operations and the streamlining of Precigen's resources, as well as increased costs related to PRGN-2012 commercial readiness. These increases were partially offset by a decrease in stock compensation and insurance expenses in 2024 compared to the same period in 2023.

Other income (expense), net

Other income, net decreased $4.3 million, or 166%, compared to the nine months ended September 30, 2023. This decrease was primarily due to the reclassification of cumulative translation losses of $2.9 million resulting from the final closing of the ActoBio facilities in the third quarter of 2024, as well as a reduction of $1.1 million in interest income due to lower investment balances, and $0.5 million in interest expense due to the final retirement of our Convertible Notes in the second quarter of 2023.

Impairment of Goodwill and other noncurrent assets

In conjunction with the suspension of ActoBio's operations, we recorded $34.5 million of impairment charges related to goodwill and long-lived assets in the second quarter of 2024.

Segment performance

The following table summarizes Segment Adjusted EBITDA, which is our primary measure of segment performance, for the nine months ended September 30, 2024 and 2023, for each of our reportable segments.

	Nine Months Ended September 30, 2024	Nine Months Ended September 30, 2023	Dollar Change	Percent Change
	(In thousands)			
Segment Adjusted EBITDA:				
Biopharmaceuticals	$ (70,629)	$ (55,034)	$ (15,595)	(28.3)%
Exemplar	(842)	(426)	(416)	N/A

For a reconciliation of Segment Adjusted EBITDA to net loss from continuing operations before income taxes, see "Notes to the Condensed Consolidated Financial Statements (Unaudited) - Note 14" appearing elsewhere in this Quarterly Report.

The following table summarizes revenues from external customers for the nine months ended September 30, 2024 and 2023, for our one reportable segment for which revenue exists.

	Nine Months Ended September 30,		Dollar Change	Percent Change
	2024	2023		
	(In thousands)			
Exemplar	$ 2,735	$ 4,997	$ (2,262)	(45.3)%

Biopharmaceuticals

Segment Adjusted EBITDA loss increased primarily due to higher fees paid to contract research organizations related to the start of the PRGN-2012 confirmatory clinical trial and close out of the PRGN-2012 pivotal clinical trial activities, together with professional fees incurred in advance of our anticipated BLA submission, offset by lower costs incurred at contract research organizations for other programs compared to the prior period. Additionally, capital expenditures were higher related to the build-out of our manufacturing facility for PRGN-2012 in the nine months ended September 30, 2024, versus the nine months ended September 30, 2023.

Exemplar

Revenues for Exemplar decreased due to a decrease in services performed resulting from a lower demand from existing customers. The decline in Segment Adjusted EBITDA was primarily due to the decreased revenues, offset by cost reduction initiatives implemented at Exemplar.

Liquidity and capital resources

Sources of liquidity

We have incurred losses from continuing operations since our inception, and as of September 30, 2024, we had an accumulated deficit of $2.1 billion. From our inception through September 30, 2024, we have funded our operations principally with proceeds received from private and public equity and debt offerings, cash received from our collaborators, and through product and service sales made directly to customers. As of September 30, 2024, we had cash and cash equivalents of $24.7 million and short-term investments of $3.9 million. Cash in excess of immediate requirements is typically invested primarily in money market funds, certificate of deposits and U.S. government debt securities in order to maintain liquidity and preserve capital.

In January 2023, we closed a public offering of 43,962,640 shares of our common stock, resulting in net proceeds to us of $72.8 million, after deducting underwriting discounts, fees, and other offering expenses.

Additionally, in August 2024, we closed a public offering of 39,878,939 shares of our common stock, resulting in net proceeds to us of $30.9 million, after deducting underwriting discounts, fees, and an estimate of other offering expenses.

Cash flows

The following table sets forth the significant sources and uses of cash for the periods set forth below:

	Nine Months Ended September 30,	
	2024	2023
	(In thousands)	
Net cash (used in) provided by:		
Operating activities	$ (59,930)	$ (51,164)
Investing activities	44,653	(16,380)
Financing activities	32,179	29,589
Effect of exchange rate changes on cash, cash equivalents, and restricted cash	(25)	(306)
Net increase (decrease) in cash, cash equivalents, and restricted cash	$ 16,877	$ (38,261)

Cash flows from operating activities:

During the nine months ended September 30, 2024, our net loss was $106.5 million, which includes the following significant noncash expenses and benefits totaling $46.1 million: (i) $34.5 million of impairment losses, (ii) $6.6 million of stock-based compensation expense, (iii) $3.9 million of depreciation and amortization expense, (iv) $2.9 million due to reclassification of cumulative translation losses, and (v) $0.6 million of shares issued as payment for services, partially offset by non-cash benefits of $1.7 million due to deferred income taxes and $0.7 million due to amortization of discounts on investments. In addition, changes in operating assets and liabilities provided $0.5 million of cash for operating activities.

During the nine months ended September 30, 2023, our net loss was $62.8 million, which includes the following significant noncash expenses and benefits totaling $11.8 million: (i) $7.6 million of stock-based compensation expense, (ii) $5.1 million of depreciation and amortization expense and (iii) $0.5 million of shares issued as payment for services, offset by non-cash benefits of $1.3 million due to amortization of discounts on investments. In addition, changes in operating assets and liabilities provided $0.1 million of cash for operating activities.

Cash flows from investing activities:

During the nine months ended September 30, 2024, we received $52.1 million of investments, from sales and maturities, net of purchases, and purchased $7.6 million of property, plant and equipment, primarily related to the build-out of our manufacturing facility.

During the nine months ended September 30, 2023, we purchased $16.0 million of investments, net of sales and maturities.

Cash flows from financing activities:

During the nine months ended September 30, 2024, we received $31.8 million of proceeds, net of certain issuance costs, from the sale of our common stock in an underwritten public offering and $0.3 million of proceeds from stock option exercises.

During the nine months ended September 30, 2023, we received $72.8 million proceeds from the sale of our common stock in an underwritten public offering and retired $43.2 million of our Convertible Notes (including cost to retire).

Future capital requirements

Our future capital requirements will depend on many factors, including:

- progress in our research and development programs, as well as the magnitude and speed of development of these programs;
- capital expenditures to building out our manufacturing capabilities and preparing for commercial readiness;
- the timing of regulatory approval of our product candidates and those of our collaborations;
- the timing, receipt, and amount of any payments received in connection with strategic transactions;
- the timing, receipt, and amount of upfront, milestone, and other payments, if any, from present and future collaborators, if any;
- the timing, receipt, and amount of sales and royalties, if any, from our product candidates;
- the timing and capital requirements to scale up our various product candidates and service offerings and customer acceptance thereof;
- our ability to maintain and establish additional collaborative arrangements and/or new strategic initiatives;
- the resources, time, and cost required for the preparation, filing, prosecution, maintenance, and enforcement of our intellectual property portfolio;
- strategic mergers and acquisitions, if any, including both the upfront acquisition cost as well as the cost to integrate, maintain, and expand the strategic target; and

- the costs associated with legal activities, including litigation, arising in the course of our business activities and our ability to prevail in any such legal disputes.

Until such time, if ever, as we can regularly generate positive operating cash flows, we plan to finance our cash needs through a combination of equity offerings, debt or royalty monetization financings, government, or other third-party funding, strategic alliances, sales of assets, and licensing arrangements. We may not be able to raise sufficient additional funds on terms that are favorable to us, if at all. To the extent that we raise additional capital through the sale of equity or convertible debt securities, the ownership interests of our common shareholders will be diluted, and the terms of these securities may include liquidation or other preferences that adversely affect the rights of our common shareholders. Our current stock price may make it more difficult to pursue equity financings and lead to substantial dilution if the price of our common stock does not increase. Debt financing, if available, may involve agreements that include covenants limiting or restricting our ability to take specific actions, such as incurring additional debt, making capital expenditures, or declaring dividends. If we raise additional funds through strategic transactions, collaborations, or licensing arrangements with third parties, we may have to relinquish valuable rights to our technologies, future revenue streams, research programs, or product candidates, or to grant licenses on terms that may not be favorable to us.

We are subject to a number of risks similar to those of other companies conducting high-risk, early-stage research and development of product candidates. Principal among these risks are dependence on key individuals and intellectual property, competition from other products and companies, and the technical risks associated with the successful research, development, and clinical manufacturing of its product candidates. Our success is dependent upon our ability to continue to raise additional capital in order to fund ongoing research and development, adequately satisfy or renegotiate long-term debt obligations, obtain regulatory approval of our products, successfully commercialize our products, generate revenue, meet our obligations, and, ultimately, attain profitable operations.

Our consolidated financial statements as of September 30, 2024 have been prepared on the basis that we will continue as a going concern, which contemplates the realization of assets and satisfaction of liabilities in the normal course of business. Based on our balance of cash, cash equivalents and investments of $28.6 million at September 30, 2024 and forecasted negative cash flows from operating activities for the foreseeable future, there is substantial doubt about our ability to continue as a going concern within one year after the date that these financial statements are issued.

See the section entitled "Risk Factors" in our Annual Report for additional risks associated with our substantial capital requirements.

Contractual obligations and commitments

The following table summarizes our significant contractual obligations and commitments from continuing operations as of September 30, 2024 and the effects such obligations are expected to have on our liquidity and cash flows in future periods:

	Total	Less Than 1 Year	1 - 3 Years	3 - 5 Years	More Than 5 Years
			(In thousands)		
Operating leases	$ 7,796	$ 1,617	$ 2,764	$ 2,538	$ 877
Total	$ 7,796	$ 1,617	$ 2,764	$ 2,538	$ 877

In addition to the obligations in the table above, as of September 30, 2024, we are party to license agreements with various third parties that contain future milestones and royalty payment obligations related to development milestones and/or commercial sales of products that incorporate or use their technologies. Because these agreements are generally subject to termination by us or are dependent on certain condition precedents within our control, no amounts are included in the tables above. As of September 30, 2024, we also had research and development commitments with third parties totaling $7.4 million that had not yet been incurred.

Off-balance sheet arrangements

We did not have during the periods presented, and we do not currently have, any off-balance sheet arrangements as defined under SEC rules.

Critical accounting policies and estimates

Our management's discussion and analysis of our financial condition and results of operations is based on our condensed consolidated financial statements, which we have prepared in accordance with generally accepted accounting principles in the United States. The preparation of these condensed consolidated financial statements requires us to make estimates and assumptions that affect the reported amounts of assets and liabilities and the disclosure of contingent assets and liabilities at the date of the financial statements, as well as the reported revenues and expenses during the reporting periods. We evaluate these 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. Our actual results may differ from these estimates under different assumptions or conditions.

There have been no material changes to our critical accounting policies from those described in "Management's Discussion and Analysis of Financial Condition and Results of Operations" included in our Annual Report.

Recent accounting pronouncements

For information with respect to recent accounting pronouncements and the impact of these pronouncements on our condensed consolidated financial statements, see "Notes to the Condensed Consolidated Financial Statements (Unaudited) - Note 2" appearing elsewhere in this Quarterly Report.

Item 3. Quantitative and Qualitative Disclosures About Market Risk

The following sections provide quantitative information on our exposure to interest rate risk. We make use of sensitivity analyses that are inherently limited in estimating actual losses in fair value that can occur from changes in market conditions.

Interest rate risk

We had cash, cash equivalents and short-term investments of $28.6 million and $62.9 million as of September 30, 2024 and December 31, 2023, respectively. Our cash and cash equivalents and short-term investments consist of cash, money market funds, U.S. government debt securities, certificates of deposit, and corporate bonds. The primary objectives of our investment activities are to preserve principal, maintain liquidity, and maximize income without significantly increasing risk. Our investments consist of U.S. government debt securities, certificates of deposit, and corporate bonds which may be subject to market risk due to changes in prevailing interest rates that may cause the fair values of our investments to fluctuate. We believe that a hypothetical 100 basis point increase in interest rates would not materially affect the fair value of our interest-sensitive financial instruments and any such losses would only be realized if we sold the investments prior to maturity.

Item 4. Controls and Procedures

Pursuant to Rule 13a-15(b) under the Securities Exchange Act of 1934, as amended (the "Exchange Act"), we carried out an evaluation, under supervision and with the participation of our management, including our Chief Executive Officer ("CEO"), who is our principal executive officer, and our Chief Financial Officer ("CFO"), who is our principal financial officer, of the effectiveness of the design and operation of our disclosure controls and procedures (as defined under Rule 13a-15(e) and 15d-15(e) under the Exchange Act) as of the end of the period covered by this report. Based upon that evaluation, as of the end of the period covered by this report, our CEO and CFO concluded that our disclosure controls and procedures are effective at the reasonable assurance level to ensure that information required to be disclosed by us in the reports that we file or submit under the Exchange Act, is recorded, processed, summarized and reported, within the time periods specified in the SEC's rules and forms, and that such information is accumulated and communicated to our management, including our CEO and CFO, as appropriate, to allow timely decisions regarding required disclosure.

There has been no change in our internal control over financial reporting during the three months ended September 30, 2024, 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

In the course of our business, we are involved in litigation or legal matters, including governmental investigations. Such matters are subject to many uncertainties and outcomes are not predictable with assurance. We accrue liabilities for such matters when it is probable that future expenditures will be made and such expenditures can be reasonably estimated. As of September 30, 2024, we do not believe that any such matters, individually or in the aggregate, will have a material adverse effect on our business, financial condition, results of operations, or cash flows.

See "Notes to the Condensed Consolidated Financial Statements (Unaudited) - Note 13" appearing elsewhere in this Quarterly Report for further discussion of ongoing legal matters.

Item 1A. Risk Factors

As disclosed in "Summary of Risk Factors" and "Item 1A. Risk Factors" in our Annual Report, there are a number of risks and uncertainties that may have a material effect on the operating results of our business and our financial condition. There are no additional material updates or changes to our risk factors since the filing of our Annual Report, and our Quarterly Report on Form 10-Q for the quarterly period ended June 30, 2024 filed with the SEC on August 14, 2024, except as discussed below.

In evaluating our risks, readers also should carefully consider the risk factors discussed in our Annual Report, which could materially affect our business, financial condition, or operating results, in addition to the other information set forth in this report and in our other filings with the SEC.

Risks related to our common stock

We are required to meet the Nasdaq Global Select Market's continued listing requirements and other Nasdaq rules, or we may risk delisting. Delisting could negatively affect the price of our common stock which, could make it more difficult for us to sell securities in a future financing or for you to sell our common stock.

Our common stock is currently listed on the Nasdaq Global Select Market of The Nasdaq Stock Market, LLC ("Nasdaq"), which has qualitative and quantitative continued listing criteria. However, we cannot assure you that our common stock will continue to be listed on Nasdaq in the future. In order to continue listing our common stock on Nasdaq, we are required to meet the continued listing requirements of Nasdaq and other Nasdaq rules, including those regarding director independence and independent committee requirements, minimum stockholders' equity, minimum share price and certain other corporate governance requirements. In particular, we are required to maintain a minimum bid price for our listed common stock of $1.00 per share. If we do not meet these continued listing requirements, our common stock could be delisted.

On November 1, 2024, we received a deficiency letter (the "Deficiency Letter") from the Listing Qualifications Department (the "Staff") of Nasdaq indicating that, for the last thirty consecutive business days, the bid price for our common stock had closed below the minimum $1.00 per share requirement for continued listing on Nasdaq under Nasdaq Listing Rule 5450(a)(1) (the "Bid Price Rule"). In accordance with Nasdaq Listing Rule 5810(c)(3)(A), we were provided an initial period of 180 calendar days, or until April 30, 2025, to regain compliance. To regain compliance, the bid price of our common stock must close at $1.00 per share or more for a minimum of ten consecutive business days during such 180-day compliance period. The Deficiency Letter had no immediate effect on the listing or trading of our common stock.

We have not yet regained compliance with the Bid Price Rule. If we do not regain compliance with the Bid Price Rule by April 30, 2025, we may be eligible for an additional 180 calendar day compliance period. To qualify, we would be required to transfer the listing of our common stock to the Nasdaq Capital Market, provided that we meet the continued listing requirement for market value of publicly held shares and all other initial listing standards for the Nasdaq Capital Market, with the exception of the bid price requirement, and would need to provide written notice of our intention to cure the deficiency during the second compliance period, including by effecting a reverse stock split, if necessary. However, if it appears to the Staff that we will not be able to cure the deficiency, or if we are otherwise not eligible, Nasdaq would notify us that our securities would be subject to delisting. In the event of such a notification, we may appeal the Staff's determination to delist our securities. There can be no assurance that we will be eligible for the additional 180 calendar day compliance period, if applicable, or that the Staff would grant our request for continued listing subsequent to any delisting notification.

If Nasdaq delists our common stock from trading on its exchange and we are not able to list our securities on another national securities exchange, we expect our securities could be quoted on an over-the-counter market. In such case, our stockholders' ability to trade, or obtain quotations of the market value of our common stock would be severely limited because of lower trading volumes and transaction delays. These factors could contribute to lower prices and larger spreads in the bid and ask prices of these securities. In addition, delisting could also result in a determination that our common stock is a "penny stock" which will require brokers trading in our common stock to adhere to more stringent rules and possibly result in a reduced level of trading activity in the secondary trading market for our securities.

There can be no assurance that our securities, if delisted from Nasdaq in the future, would be listed on a national securities exchange, a national quotation service, the over-the-counter markets or the pink sheets. Delisting from Nasdaq, or even the issuance of a notice of potential delisting, would also result in negative publicity, make it more difficult for us to raise additional capital, adversely affect the market liquidity of our securities, decrease securities analysts' coverage of us or diminish investor, supplier and employee confidence, any or all of which could material adversely affect our business and results of operations.

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

None.

Item 3. Defaults on Senior Securities

None.

Item 4. Mine Safety Disclosures

Not applicable.

Item 5. Other Information

Rule 10b5-1 and Non-Rule 10b5-1 Trading Arrangements

During the three months ended September 30, 2024, certain of our officers and directors adopted Rule 10b5-1 trading arrangements as follows.

On September 30, 2024, Helen Sabzevari, our Chief Executive Officer and director, Harry Thomasian, our Chief Financial Officer, Donald Lehr, our Chief Legal Officer, Rutul Shah, our Chief Operating Officer, and Phil Tennant, our Chief Commercial Officer, each adopted a trading plan intended to satisfy the conditions under Rule 10b5-1(c) of the Exchange Act. The trading plans provide for the sale, pursuant to a sell-to-cover instruction, of a number of shares of our common stock necessary to satisfy the executive's tax withholding requirements upon the vesting of PSUs granted to each executive on August 28, 2024 in the following amounts: (i) Ms. Sabzevari, 1,650,000 PSUs; (ii) Mr. Thomasian, 250,000 PSUs; (iii) Mr. Lehr, 108,000 PSUs; (iv) Mr. Shah, 250,000 PSUs; and (v) Mr. Tennant, 50,000 PSUs.

Under the terms of the PSUs, the PSUs will vest in two equal 50% installments upon the achievement of two specified operational milestones that occur during the period from the grant date to December 31, 2026 (the date of achievement of each milestone, a "Vesting Date"). Under the trading plans, the Company is authorized to direct the sale of shares upon the occurrence of a Vesting Date, and each plan will terminate 45 days after the last Vesting Date, unless terminated earlier in accordance with the terms of the trading plan. The latest possible termination date under the trading plans is February 14, 2027.

Item 6. Exhibits

Exhibit No.	Description
10.1	Form of Performance Stock Unit Agreement under the 2023 Omnibus Incentive Plan.
31.1	Certification of Helen Sabzevari, Chief Executive Officer (Principal Executive Officer) of the Company, pursuant to Rules 13a-14(a) and 15d-14(a) promulgated under the Securities Exchange Act of 1934, as amended, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
31.2	Certification of Harry Thomasian Jr., Chief Financial Officer (Principal Financial Officer) of the Company, pursuant to Rules 13a-14(a) and 15d-14(a) promulgated under the Securities Exchange Act of 1934, as amended, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
32.1**	Certification of Helen Sabzevari, Chief Executive Officer (Principal Executive Officer) of the Company, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
32.2**	Certification of Harry Thomasian Jr., Chief Financial Officer (Principal Financial Officer) of the Company, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
101**	Interactive Data File (Quarterly Report on Form 10-Q, for the quarterly period ended September 30, 2024, formatted in Inline XBRL (eXtensible Business Reporting Language)).
	Attached as Exhibit 101.0 to this Quarterly Report on Form 10-Q are the following documents formatted in XBRL: (i) the Condensed Consolidated Balance Sheets as of September 30, 2024 and December 31, 2023, (ii) the Condensed Consolidated Statements of Operations for the three and nine months ended September 30, 2024 and 2023, (iii) the Condensed Consolidated Statements of Comprehensive Loss for the three and nine months ended September 30, 2024 and 2023, (iv) the Condensed Consolidated Statements of Shareholders' Equity for the three and nine months ended September 30, 2024 and 2023, (v) the Condensed Consolidated Statements of Cash Flows for the nine months ended September 30, 2024 and 2023, and (vi) the Notes to the Condensed Consolidated Financial Statements.
104**	Cover Page Interactive Data File (embedded within the Inline XBRL document).

** Furnished herewith.

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.

	Precigen, Inc. (Registrant)	
Date: November 14, 2024	By:	/s/ HARRY THOMASIAN JR.
		Harry Thomasian Jr. *Chief Financial Officer* (Principal Financial and Accounting Officer)

PRECIGEN, INC.
2023 OMNIBUS INCENTIVE PLAN

Performance Stock Unit Agreement

THIS PERFORMANCE STOCK UNIT AGREEMENT (this "Agreement") dated as of _______, between Precigen, Inc., a Virginia corporation (the "Company"), and _______ (the "Participant"), is made pursuant and subject to the provisions of the Company's 2023 Omnibus Incentive Plan, as amended (the "Plan"), a copy of which is attached hereto. All terms used herein that are defined in the Plan have the same meaning given them in the Plan.

1. *Grant of Performance Stock Units*. Pursuant to the Plan, the Company, on _______ (the "Date of Grant"), granted to the Participant, subject to the terms and conditions of the Plan and subject further to the terms and conditions set forth herein, including Appendix A, an award of performance stock units ("PSUs") representing the right to receive one Share upon the vesting of each PSU (the "Award"). The target number of PSUs subject to this Award (the "Target PSUs") is set forth on Appendix A and the actual number of PSUs earned will be determined in accordance with Appendix A. This Award represents an unsecured promise of the Company to deliver, and the right of the Participant to receive, Shares at the time and on the terms and conditions set forth herein. As a holder of this Award, the Participant has only the rights of a general unsecured creditor of the Company.

2. *Terms and Conditions*. This Award is subject to the following terms and conditions:

(a) *Vesting of Shares*.

(i) *In General*. This Award shall become vested and non-forfeitable based on and subject to the achievement of the performance milestones of the Company set forth on Appendix A (the "Performance Milestones") and, except as set forth in Sections 2(a)(ii) through (iv) below, the Participant's continued employment with the Company or a Subsidiary through the applicable Certification Date (as defined in Appendix A) for each Performance Milestone. The Participant shall immediately forfeit any and all PSUs for which a Performance Milestone is not achieved on or prior to December 31, 2026 (the "Performance End Date").

(ii) *Termination without Cause or Resignation for Good Reason*. In the event of the Participant's Termination of Service prior to the Performance End Date (or, if later, a Certification Date) as a result of a termination of employment by the Company without Cause (as defined below) or a resignation by the Participant with Good Reason (as defined below), any portion of the Award that is outstanding as of the date of Termination of Service shall remain outstanding and eligible to vest upon the earlier of (a) the achievement of the Performance Milestones and the Certification thereof in accordance with Appendix A or (b) a Change in Control in accordance with Section 2(a)(v); *provided* that the number of PSUs that would otherwise be eligible to vest upon the achievement of a Performance Milestone in accordance with Appendix A or a Change in Control in accordance with Section 2(a)(v) shall be multiplied by a fraction, (x) the numerator of which is the number of days between March 1, 2024 and the date of Termination of Service (inclusive) and (y) the denominator of which is 1,035[1]; *provided, further*, that such fraction shall not be greater than one (1).

(iii) *Termination due to Death or Disability*. In the event of the Participant's Termination of Service prior to the Performance End Date (or, if later, a Certification Date) as a result of the Participant's death or Disability (as defined below), any portion of the Award that is outstanding as of the date of Termination of Service shall remain outstanding and eligible to vest upon the earlier of (a) the achievement of the Performance Milestones and the Certification thereof in accordance with Appendix A or (b) a Change in Control in accordance with Section 2(a)(v). Notwithstanding anything to the contrary in Section 2(b), any portion of the Award that vests following the Participant's death pursuant to this Section 2(a)(iii) shall inure to the benefit of the estate of the Participant.

(iv) *Termination for Any Other Reason*. In the event of the Participant's Termination of Service for any reason other than those described in Sections 2(a)(ii) and (iii) above, including, without limitation, as a result of

---

[1] **Note**: This is the total number of days between 3/1/2024 and 12/31/2026.

termination of employment by the Company for Cause or a resignation by the Participant without Good Reason, any portion of the Award that is not vested and earned pursuant to Section 2(a)(i) as of the date of the Participant's Termination of Service will be forfeited automatically at the close of business on that date. In no event may any portion of the Award become vested and payable, in whole or in part, after forfeiture pursuant to this Section 2(a)(iv).

(v) *Change in Control.* In the event a Change in Control occurs prior to the Performance End Date (or, if later, a Certification Date) and no provision is made for the continuance or assumption of the Award by the successor or surviving entity (or its parent) in such Change in Control, any portion of the Award that remains outstanding as of immediately prior to such Change in Control shall become vested in full with respect to the number of Target PSUs on the date of such Change in Control, *provided* that the Participant has remained continuously employed by the Company or any Subsidiary from the Date of Grant until such date, except as otherwise set forth in Section 2(a)(ii) or (iii) above.

(vi) *Definitions.* For purposes of this Award:

a. "Cause" shall mean any one of the following events: (1) material failure to observe and comply with any of the Company's (or an Affiliate's) material written policies, including without limitation its policies prohibiting harassment (sexual or otherwise) and discrimination and its policies regarding equal employment opportunity and maintenance of a drug-free work place, to the satisfaction of the Company; (2) continued failure to substantially perform material duties with the Company (or an Affiliate); (3) willful failure to carry out, or comply with, in any material respect any lawful and reasonable written directive of the Company (or an Affiliate), which is not cured within twenty (20) calendar days after receipt by the Participant of notice of such failure; (4) commission of any act or omission that results in, or that may reasonably be expected to result in, a conviction, plea of no contest or imposition of unadjudicated probation for any felony or any crime involving moral turpitude; (5) commission of any act or omission that results in the Participant's incarceration in a federal, state, or local jail or prison; (6) commission of any act of dishonesty, illegal conduct, fraud, embezzlement, misappropriation, material misconduct, or breach of fiduciary duty either (x) against the Company or any of its Affiliates (or any predecessor thereto or successor thereof) or (y) which is or which is reasonably expected to be materially injurious to the Company or its Affiliates; or (7) material or willful breach of any agreement (including this Award) between the Participant and the Company (or an Affiliate), which is not cured within twenty (20) calendar days after receipt by the Participant of written notice of such breach.

b. "Disability" means any physical or mental condition that would qualify the Participant for a disability under any long-term disability plan maintained by the Company or any Affiliate that is applicable to such Participant; *provided* that, to the extent necessary for the Award to be in compliance with Section 409A of the Code, "Disability" shall mean the Participant is "disabled" within the meaning of Section 409A of the Code.

c. "Good Reason" shall mean any one of the following events: (1) a material diminution in the Participant's authority, duties or responsibilities; (2) a material reduction in the Participant's base salary (other than a general reduction in compensation applying to other similarly-situated employees of the Company and its Subsidiaries); or (3) the relocation of the primary office from which the Participant is required to work to a location more than fifty (50) miles from the current office location where the Participant primarily works, which relocation increases the Participant's one-way commute. No event or condition shall constitute "Good Reason" unless the Participant provides the Company with written notice of the event or condition the Participant alleges to be Good Reason within thirty (30) days after such event or condition first occurs. The termination shall not become effective unless the Company fails to cure such event or condition constituting Good Reason within thirty (30) days following the Company's receipt of such notice. The Participant must terminate employment within thirty (30) days after the end of the cure period in order for the termination to be for Good Reason.

(vii) *Terms of Payment.* The Shares issuable in respect of any portion of the Award that becomes earned and vested under this Agreement shall be issued and delivered to the Participant as soon as administratively practicable but in no event later than thirty (30) days after an applicable Certification Date (each such date, a "Share Issuance Date"). If a Share Issuance Date falls during a period when, pursuant to applicable law, regulations, NASDAQ rules or the Company's internal policies or agreements with third parties, the Company is not permitted to issue such Shares, such Shares shall be issued and delivered to Participant no later than the third business day following the conclusion of such period.

(viii) *Dividend Equivalent Payments.* If, prior to a Share Issuance Date, the Company pays a dividend on Shares, the Participant shall be entitled (subject, for the avoidance of doubt, to achievement of the vesting and performance conditions set forth in this Agreement) to a payment upon such Share Issuance Date in the same amount as the dividend the Participant would have received if he or she held such Shares in respect of his or her Award held but not previously forfeited immediately prior to the record date of the dividend (a "Dividend Equivalent"). No such Dividend Equivalents shall be paid to the Participant with respect to any portion of the Award that is not earned and vested or is thereafter cancelled or forfeited. The Committee shall determine the form of payment in its sole discretion and may pay Dividend Equivalents in Shares, cash or a combination thereof. The Company shall pay the Dividend Equivalents at the same time as the delivery of Shares with respect to the Awards to which such Dividend Equivalents relate.

(ix) *Anti-Hedging/Pledging and Insider Trading Policy.* All Shares issued and delivered under this Award shall be subject to any anti-pledging and/or anti-hedging policies the Company may adopt from time to time and shall be subject to the Company's Policy Relating to Insider Trading of Securities and Confidential Information, as amended from time to time.

(b) *Transferability.* Except as provided herein, this Award is nontransferable, other than by will or the laws of descent and distribution, and during the Participant's lifetime, may be transferred by the Participant to immediate family members or trusts or other entities on behalf of the Participant and/or immediate family members or for charitable donations. Any such transfer will be permitted only if (i) the Participant does not receive any consideration for the transfer and (ii) the Committee expressly approves the transfer. Any transferee to whom this Award is transferred shall be bound by the same terms and conditions that governed the Award during the time it was held by the Participant (which terms and conditions shall still be read from the perspective of the Participant). Any such transfer shall be evidenced by an appropriate written document that the Participant executes and the Participant shall deliver a copy thereof to the Committee on or prior to the effective date of the transfer. No right or interest of the Participant or any transferee in the Award shall be liable for, or subject to, any lien, obligation or liability of the Participant or any transferee. For clarity, this Section 2(b) refers only to the right to receive the Shares underlying this Award and not the Shares which have been issued to the Participant in settlement of this Award.

3. *Shareholder Rights.* The Participant shall not have any rights as a shareholder with respect to Shares subject to this Award until issuance of the Shares pursuant to Section 2(a)(vii). The Company may include on any certificates or notations representing Shares issued pursuant to this Award such legends referring to any representations, restrictions or any other applicable statements as the Company, in its discretion, shall deem appropriate.

4. *Agreement to Terms of the Plan and Agreement.* The Participant has received a copy of the Plan, has read and understands the terms of the Plan and this Agreement, and agrees to be bound by their terms and conditions.

5. *Withholding of Taxes.* The Company's obligation to deliver the Shares, or, if applicable, cash, upon vesting of the Award is subject to the Participant's satisfaction of any applicable federal, state and local income and employment tax and withholding requirements in a manner and form satisfactory to the Company. The Company, to the extent applicable law permits, may allow the Participant to pay such withholding amounts (i) by surrendering (actually or by attestation) Shares that the Participant already owns (but only for the minimum required withholding), (ii) by means of a "net withholding" procedure, (iii) by such other medium of payment as the Company in its discretion shall authorize or (iv) by any combination of the allowable methods of payment set forth herein.

6. *Tax Consequences*. The Participant acknowledges (i) that there may be adverse tax consequences upon acquisition or disposition of the Shares issuable pursuant to this Agreement and (ii) that Participant should consult a tax adviser prior to such acquisition or disposition. The Participant is solely responsible for determining the tax consequences of the Award and for satisfying the Participant's tax obligations with respect to the Award (including, but not limited to, any income or excise tax as resulting from the application of Sections 409A or 4999 of the Code), and the Company shall not be liable if the Award is subject to Sections 409A or 4999 of the Code.

7. *Cancellation/Clawback*. The Participant hereby acknowledges and agrees that, consistent with the terms and condition of Section 19 (Cancellation or "Clawback" of Awards) of the Plan, the Participant and the Award are subject to the Precigen Inc. Financial Statement Compensation Recoupment Policy or any other clawback policy adopted by the Company (as applicable, a "Clawback Policy") . In consideration of the grant of the Award under this Agreement, the Participant agrees that, to the extent that the Participant is or becomes covered by the Clawback Policy, the Award granted to the Participant pursuant to this Agreement and any Shares issued upon settlement thereof shall be subject to such Clawback Policy as may be in effect from time to time. In addition, by accepting this Award and in consideration for the opportunity to receive the compensation as provided under this Award, the Participant agrees that (i) any other compensation granted, awarded, paid or otherwise provided to or earned by the Participant, whether before, on or following the date hereof, that is covered by an applicable Clawback Policy shall be subject to the recoupment and/or forfeiture provisions thereof, and (ii) such Clawback Policy shall be deemed to amend (on both a retroactive and prospective basis) the terms of any employment, compensation or similar agreement to which the Participant is a party, and the terms of any compensation plan, program or agreement, under which any incentive-based compensation has been or may be granted, awarded, paid or otherwise provided to or earned by the Participant (including without limitation, an award agreement evidencing an award granted to the Participant under the Plan). In the event it is determined that any amounts granted, awarded, paid or otherwise provided to or earned by the Participant must be forfeited or reimbursed to the Company pursuant to any such Clawback Policy, the Participant agrees that the Participant will promptly take any action necessary to effectuate such forfeiture and/or reimbursement.

8. *Fractional Shares*. Fractional shares shall not be issuable hereunder, and when any provision hereof may entitle the Participant to a fractional share such fractional share shall be disregarded.

9. *Change in Capital Structure*. The terms of this Agreement shall be adjusted in accordance with the terms and conditions of the Plan as the Committee determines is required under the Plan in the event the Company effects one or more stock dividends, stock splits, recapitalizations or consolidations of shares or other similar changes in capitalization.

10. *Notice*. Any notice or other communication given pursuant to this Agreement, or in any way with respect to this Agreement, shall be in writing and shall be personally delivered or mailed by United States registered or certified mail, postage prepaid, return receipt requested, to the following addresses:

If to the Company:	Precigen, Inc. 20374 Seneca Meadows Parkway Germantown, MD 20876 Attention: Chief Legal Officer
If to the Participant:	To the Participant's address on file with the Company.

11. *No Right to Continued Employment or Service*. Neither the Plan, the granting of the Award nor any other action taken pursuant to the Plan or this Agreement constitutes or is evidence of any agreement or understanding, expressed or implied, that the Company shall retain the Participant as an employee or other service provider for any period of time or at any particular rate of compensation.

12. *Binding Effect*. Subject to the limitations stated above and in the Plan, this Agreement shall be binding upon and inure to the benefit of the legatees, distributees, and personal representatives of the Participant and the successors of the Company.

13. *Conflicts*. In the event of any conflict between the provisions of the Plan and the provisions of this Agreement, the provisions of the Plan shall govern. All references herein to the Plan shall mean the Plan as in effect on the date hereof.

14. *Counterparts*. This Agreement may be executed in a number of counterparts, each of which shall be deemed an original, but all of which together shall constitute one in the same instrument.

15. *Miscellaneous*. The parties agree to execute such further instruments and take such further actions as may be necessary to carry out the intent of the Plan and this Agreement. This Agreement and the Plan shall constitute the entire agreement of the parties with respect to the subject matter hereof.

16. *Section 409A*. The PSUs are intended to comply with Section 409A of the Code to the extent subject thereto, and shall be interpreted in accordance with Section 409A of the Code. The Company reserves the right to modify the terms of this Agreement, including, without limitation, the payment provisions applicable to the Award, to the extent necessary or advisable to comply with Section 409A of the Code. For purposes of this Agreement, all rights to payments hereunder shall be treated as rights to receive a series of separate payments and benefits to the fullest extent allowed by Section 409A of the Code. Notwithstanding any provision in the Plan or this Agreement to the contrary, if the Participant is a "specified employee" and a payment subject to Section 409A of the Code (and not excepted therefrom) to the Participant is due upon a termination of service, such payment shall be delayed for a period of six (6) months after the date of the Participant's termination of service (or, if earlier, the death of the Participant). Any payment that would otherwise have been due or owing during such six (6)-month period will be paid immediately following the end of the six (6)-month period unless another compliant date is specified in the applicable agreement. If the Award includes "dividend equivalents" (within the meaning of Treas. Reg. § 1.409A-3(e)), the Participant's right to such dividend equivalents shall be treated separately from the right to other amounts under the Award. Notwithstanding the preceding, neither the Company nor any Affiliate shall be liable to the Participant or any other person if the Internal Revenue Service or any court or other authority having jurisdiction over such matter determines for any reason that any payments hereunder are subject to taxes, penalties or interest as a result of failing to be exempt from, or comply with, Section 409A of the Code.

17. *Governing Law*. This Agreement shall be governed by the laws of the Commonwealth of Virginia, except to the extent federal law applies.

IN WITNESS WHEREOF, the Company has caused this Agreement to be signed by a duly authorized officer, and the Participant has affixed his signature hereto.

COMPANY:

PRECIGEN, INC.

By: ______________________________
Name: ______________________________
Title: ______________________________

PARTICIPANT:

____

#98422604v11

APPENDIX A

Target PSUs:

1. PSU Vesting. The PSUs may become earned and vested based on the achievement prior to the Performance End Date of the Performance Milestones set forth below, subject to the Participant's continued employment with the Company through the date of Certification (as defined below) by the Committee for each Performance Milestone (each, a "Certification Date"). Each Performance Milestone identified below shall represent a tranche (each a "Tranche") of the number of Target PSUs that shall become earned if the Performance Milestone for such Tranche is achieved, as follows:

   (a) Fifty percent (50%) of the Target PSUs shall be earned upon the acceptance by the U.S. Food and Drug Administration (the "FDA") of a Biologics License Application ("BLA") for the Company's PRGN-2012 investigational product; and

   (b) Fifty percent (50%) of the Target PSUs shall be earned upon the approval of the BLA by the FDA.

   For the avoidance of doubt, in no event will any of the PSUs become earned if neither Tranche of the Performance Milestones is achieved prior to the Performance End Date. Any PSUs that remain unearned as of the Performance End Date shall be immediately cancelled and forfeited.

2. Certification by the Committee. The Committee shall, periodically, assess whether the Performance Milestones have been achieved. The Committee, in its sole, good faith discretion shall determine, approve and certify in writing that the requisite Performance Milestone for a Tranche has been achieved (a "Certification").

Exhibit 31.1

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

I, Helen Sabzevari, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Precigen, 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 and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

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

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

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

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

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

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

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

Date: November 14, 2024

/s/ HELEN SABZEVARI
Helen Sabzevari
Chief Executive Officer
(Principal Executive Officer)

Exhibit 31.2

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

I, Harry Thomasian Jr., certify that:

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

Date: November 14, 2024

/s/ HARRY THOMASIAN JR.
Harry Thomasian Jr.
Chief Financial Officer
(Principal Financial Officer)

Exhibit 32.1

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

I, Helen Sabzevari, Chief Executive Officer of Precigen, Inc. (the "Company"), do hereby certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that to the best of my knowledge:

- the Quarterly Report on Form 10-Q of the Company for the quarter ended September 30, 2024 (the "Report") fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

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

Date: November 14, 2024

/s/ HELEN SABZEVARI
Helen Sabzevari
Chief Executive Officer
(Principal Executive Officer)

A signed original of this written statement required by Section 906, or other document authenticating, acknowledging or otherwise adopting the signature that appears in typed form within the electronic version of this written statement required by Section 906, has been provided to the Company and will be retained by the Company and furnished to the Securities and Exchange Commission or its staff upon request.

This certification accompanies the Form 10-Q to which it relates, is not deemed filed with the Securities and Exchange Commission and is not to be incorporated by reference into any filing of the Registrant under the Securities Act of 1933 or the Securities Exchange Act of 1934 (whether made before or after the date of the Form 10-Q), irrespective of any general incorporation language contained in such filing.

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

I, Harry Thomasian Jr., Chief Financial Officer of Precigen, Inc. (the "Company"), do hereby certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that to the best of my knowledge:

- the Quarterly Report on Form 10-Q of the Company for the quarter ended September 30, 2024 (the "Report") fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

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

Date: November 14, 2024

/s/ HARRY THOMASIAN JR.
Harry Thomasian Jr.
Chief Financial Officer
(Principal Financial Officer)

A signed original of this written statement required by Section 906, or other document authenticating, acknowledging or otherwise adopting the signature that appears in typed form within the electronic version of this written statement required by Section 906, has been provided to the Company and will be retained by the Company and furnished to the Securities and Exchange Commission or its staff upon request.

This certification accompanies the Form 10-Q to which it relates, is not deemed filed with the Securities and Exchange Commission and is not to be incorporated by reference into any filing of the Registrant under the Securities Act of 1933 or the Securities Exchange Act of 1934 (whether made before or after the date of the Form 10-Q), irrespective of any general incorporation language contained in such filing.