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

Form 10-Q

(Mark One)

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

For the quarterly period ended June 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: 001-38663

Gritstone bio, Inc.
(Exact Name of Registrant as Specified in its Charter)

Delaware	**47-4859534**
(State or Other Jurisdiction of Incorporation or Organization)	**(I.R.S. Employer Identification No.)**
5959 Horton Street, Suite 300 Emeryville, California	**94608**
(Address of Principal Executive Offices)	**(Zip Code)**

(510) 871-6100
(Registrant's Telephone Number, Including Area Code)

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

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock, $0.0001 par value per share	**GRTS**	**The Nasdaq Stock Market LLC**

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

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

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

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

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

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

As of August 8, 2024, there were 118,109,074 shares of the registrant's common stock, par value $0.0001 per share, outstanding.

Gritstone bio, Inc.
Table of Contents

PART I. FINANCIAL INFORMATION

ITEM 1. FINANCIAL STATEMENTS

Gritstone bio, Inc.
Condensed Consolidated Balance Sheets
(Unaudited)

(In thousands, except share amounts and par value)

	June 30, 2024	December 31, 2023
Assets		
Current assets:		
Cash and cash equivalents	$ 50,900	$ 62,986
Marketable securities	4,812	16,288
Restricted cash	1,274	2,299
Prepaid expenses and other current assets	3,724	5,862
Total current assets	60,710	87,435
Long-term restricted cash	4,695	5,290
Property and equipment, net	12,527	17,281
Lease right-of-use assets	64,001	66,839
Deposits and other long-term assets	609	924
Total assets	$ 142,542	$ 177,769
Liabilities and stockholders' equity		
Current liabilities:		
Accounts payable	$ 4,132	$ 3,819
Accrued compensation	5,272	9,357
Accrued liabilities	856	1,213
Accrued research and development expenses	3,002	3,696
Lease liabilities, current portion	7,159	6,904
Deferred revenue, current portion	698	2,350
Warrant liability	2,782	—
Total current liabilities	23,901	27,339
Other liabilities, noncurrent	1,117	709
Lease liabilities, net of current portion	54,829	57,727
Debt, noncurrent	40,506	40,144
Total liabilities	120,353	125,919
Commitments and contingencies (Notes 6, 8 and 9)		
Stockholders' equity:		
Preferred stock, $0.0001 par value; 10,000,000 shares authorized; no shares issued and outstanding at June 30, 2024 and December 31, 2023	—	—
Common stock, $0.0001 par value; 300,000,000 shares authorized at June 30, 2024 and December 31, 2023; 117,787,732 and 97,585,415 shares issued and outstanding at June 30, 2024 and December 31, 2023, respectively	24	22
Additional paid-in capital	745,510	711,386
Accumulated other comprehensive (loss) gain	(3)	3
Accumulated deficit	(723,342)	(659,561)
Total stockholders' equity	22,189	51,850
Total liabilities and stockholders' equity	$ 142,542	$ 177,769

See accompanying notes to the unaudited condensed consolidated financial statements.

Gritstone bio, Inc.
Condensed Consolidated Statements of Operations and Comprehensive Loss
(Unaudited)

(In thousands, except share and per share amounts)

	Three Months Ended June 30,		Six Months Ended June 30,	
	2024	2023	2024	2023
Revenues:				
Collaboration and license revenues	$ 57	$ 400	$ 106	$ 941
Grant revenues	864	1,555	2,557	3,456
Total revenues	921	1,955	2,663	4,397
Operating expenses:				
Research and development	20,811	30,967	53,852	61,481
General and administrative	7,698	6,716	16,200	13,461
Total operating expenses	28,509	37,683	70,052	74,942
Loss from operations	(27,588)	(35,728)	(67,389)	(70,545)
Interest income	691	1,479	1,403	3,157
Interest expense	(1,304)	(985)	(2,600)	(1,828)
Other income (expense)	4,805	(22)	4,805	(22)
Net loss	(23,396)	(35,256)	(63,781)	(69,238)
Other comprehensive loss:				
Unrealized loss on marketable securities	(2)	(73)	(6)	(45)
Comprehensive loss	$ (23,398)	$ (35,329)	$ (63,787)	$ (69,283)
Net loss per share, basic and diluted	$ (0.16)	$ (0.31)	$ (0.49)	$ (0.60)
Weighted-average number of shares used in computing net loss per share, basic and diluted	143,296,662	114,929,523	130,843,943	114,676,261

See accompanying notes to the unaudited condensed consolidated financial statements.

Gritstone bio, Inc.
Condensed Consolidated Statements of Stockholders' Equity
(Unaudited)

(In thousands, except share amounts)

Three Months Ended June 30, 2024:

	Common Stock		Additional Paid-In	Accumulated Other Comprehensive	Accumulated	Total Stockholders'
	Shares	Amount	Capital	Loss	Deficit	Equity
Balance at March 31, 2024	98,114,860	$ 22	$ 713,889	$ (1)	$ (699,946)	$ 13,964
Unrealized loss on marketable securities	—	—	—	(2)	—	(2)
Issuance of common stock under the public offering, net of issuance costs of $987	8,333,333	1	8,594	—	—	8,595
Issuance of pre-funded warrants under the public offering, net of issuance costs of $1580	—	—	13,750	—	—	13,750
Issuance of common stock under at the market, ("ATM") equity offering program, net of issuance costs of $20	6,952,236	1	5,622	—	—	5,623
Issuance of common stock upon exercise of stock options	9,888	—	16	—	—	16
Issuance of common stock for warrant exercises	4,009,399	—	40	—	—	40
Issuance of common stock under the ESPP	200,461	—	132	—	—	132
Vesting of performance-based restricted stock units awards	167,555	—	—	—	—	—
Stock-based compensation	—	—	3,467	—		3,467
Net loss	—	—	—	—	(23,396)	(23,396)
Balance at June 30, 2024	117,787,732	$ 24	$ 745,510	$ (3)	$ (723,342)	$ 22,189

Three Months Ended June 30, 2023:

	Common Stock		Additional Paid-In	Accumulated Other Comprehensive	Accumulated	Total Stockholders'
	Shares	Amount	Capital	Loss	Deficit	Equity
Balance at March 31, 2023	87,848,417	$ 22	$ 695,961	$ (52)	$ (555,053)	$ 140,878
Issuance of common stock upon exercise of stock options	6,000	—	5	—	—	5
Issuance of common stock under the ATM equity offering program, net of issuance costs of $21	246,199	—	623	—	—	623
Issuance of common stock for warrant exercises	2,849,405	—	—	—	—	—
Issuance of common stock under the ESPP	274,189	—	450	—	—	450
Stock-based compensation	—	—	2,940	—	—	2,940
Unrealized loss on marketable securities	—	—	—	(73)	—	(73)
Net loss	—	—	—	—	(35,256)	(35,256)
Balance at June 30, 2023	91,224,210	$ 22	$ 699,979	$ (125)	$ (590,309)	$ 109,567

Continued on next page.

See accompanying notes to the unaudited condensed consolidated financial statements.

Gritstone bio, Inc.
Condensed Consolidated Statements of Stockholders' Equity
(Unaudited)
(In thousands, except share amounts)

Six Months Ended June 30, 2024:

	Common Stock		Additional Paid-In	Accumulated Other Comprehensive	Accumulated	Total Stockholders'
	Shares	Amount	Capital	Gain (Loss)	Deficit	Equity
Balance at December 31, 2023	97,585,415	$ 22	$ 711,386	$ 3	$ (659,561)	$ 51,850
Unrealized loss on marketable securities	—	—	—	(6)	—	(6)
Issuance of common stock upon restricted stock units vesting	508,536	—	—	—	—	—
Tax payments related to shares withheld for vested restricted stock units	—	—	(788)	—	—	(788)
Issuance of common stock under the public offering, net of issuance costs of $987	8,333,333	1	8,594	—	—	8,595
Issuance of pre-funded warrants under the public offering, net of issuance costs of $1580	—	—	13,750	—	—	13,750
Issuance of common stock under at the market, ("ATM") equity offering program, net of issuance costs of $20	6,952,236	1	5,622	—	—	5,623
Issuance of common stock upon exercise of stock options	30,797	—	61	—	—	61
Issuance of common stock for warrant exercises	4,009,399	—	40	—	—	40
Issuance of common stock under the ESPP	200,461	—	132	—	—	132
Vesting of performance-based restricted stock units awards	167,555	—	—	—	—	—
Stock-based compensation	—	—	6,713	—		6,713
Net loss	—	—	—	—	(63,781)	(63,781)
Balance at June 30, 2024	117,787,732	$ 24	$ 745,510	$ (3)	$ (723,342)	$ 22,189

Six Months Ended June 30, 2023:

	Common Stock		Additional Paid-In	Accumulated Other Comprehensive	Accumulated	Total Stockholders'
	Shares	Amount	Capital	Loss	Deficit	Equity
Balance at December 31, 2022	86,894,901	$ 22	$ 691,910	$ (80)	$ (521,071)	$ 170,781
Unrealized loss on marketable securities	—	—	—	(45)	—	(45)
Issuance of common stock upon restricted stock units vesting	345,663	—	—	—	—	—
Tax payments related to shares withheld for vested restricted stock units	—	—	(742)	—	—	(742)
Issuance of common stock under at the market, ("ATM") equity offering program, net of issuance costs of $79	854,052	—	2,525	—	—	2,525
Issuance of common stock upon exercise of stock options	6,000	—	5	—	—	5
Issuance of common stock for warrant exercises	2,849,405	—	—	—	—	—
Issuance of common stock under the ESPP	274,189	—	450	—	—	450
Stock-based compensation	—	—	5,831	—		5,831
Net loss	—	—	—	—	(69,238)	(69,238)
Balance at June 30, 2023	91,224,210	$ 22	$ 699,979	$ (125)	$ (590,309)	$ 109,567

See accompanying notes to the unaudited condensed consolidated financial statements.

Gritstone bio, Inc.
Condensed Consolidated Statements of Cash Flows
(Unaudited)

(In thousands)

	Six Months Ended June 30,	
	2024	2023
Operating activities		
Net loss	$ (63,781)	$ (69,238)
Adjustments to reconcile net loss to net cash used in operating activities:		
Depreciation and amortization	3,346	3,706
Net accretion of premiums and discounts on marketable securities	(123)	(1,797)
Amortization of debt discount and issuance costs	770	637
Stock-based compensation	6,713	5,831
Non-cash operating lease expense	6,614	6,762
Impairment of property, plant and equipment	1,483	21
Change in fair value of warrant liability	(4,805)	—
Changes in operating assets and liabilities:		
Prepaid expenses and other current assets	2,138	1,608
Deposits and other long-term assets	315	3,014
Accounts payable	59	(1,295)
Accrued compensation	(4,085)	(2,179)
Accrued and other non-current liabilities	(381)	(2,253)
Accrued research and development expenses	(694)	(1,301)
Lease liability	(6,295)	(12,256)
Deferred revenue	(1,652)	(2,313)
Net cash used in operating activities	(60,378)	(71,053)
Investing activities		
Purchase of marketable securities	(3,081)	(17,814)
Maturities of marketable securities	14,537	66,867
Sales of marketable securities	137	—
Purchase of property and equipment	(175)	(3,288)
Net cash provided by investing activities	11,418	45,765
Financing activities		
Proceeds from issuance of common stock under the ATM equity offering program	5,643	2,604
Proceeds from issuance of common stock, common warrants and pre-funded warrants from public offering	32,500	—
Proceeds from long-term debt, net of debt discount and issuance costs	—	9,962
Proceeds from issuance of common stock upon exercise of stock options and warrants	101	5
Proceeds from issuance of common stock under the ESPP	132	450
Payments of financing costs	(2,210)	(2,496)
Payments of financing lease	(124)	(119)
Tax payments related to shares withheld for vested restricted stock units	(788)	(742)
Net cash provided by financing activities	35,254	9,664
Net decrease in cash, cash equivalents and restricted cash	(13,706)	(15,624)
Cash, cash equivalents and restricted cash at beginning of period	70,575	64,765
Cash, cash equivalents and restricted cash at end of period	$ 56,869	$ 49,141
Supplemental disclosures of non-cash investing and financing information		
Property and equipment purchases accrued but not yet paid	$ 33	$ 692
Cash paid for interest on debt	$ 1,764	$ 1,073
Financing costs included in accrued liabilities and accounts payable	$ 392	$ 16
Assets acquired under leasing obligations	$ 748	$ 59,320

See accompanying notes to the unaudited condensed consolidated financial statements.

1. Organization

Description of Business

Gritstone bio, Inc. ("Gritstone" or "the Company") is a clinical stage biotechnology company that aims to develop the world's most potent vaccines. The Company was incorporated in the state of Delaware in August 2015, and is based in Emeryville, California and Boston, Massachusetts, with a manufacturing facility in Pleasanton, California. The Company operates in one segment.

Liquidity

The Company has incurred operating losses and has an accumulated deficit as a result of ongoing efforts to develop drug product candidates, including conducting preclinical and clinical trials and providing general and administrative support for these operations. The Company had net losses of $23.4 million and $63.8 million for the three months and six months ended June 30, 2024, respectively, and $35.3 million and $69.2 million for the three and six months ended June 30, 2023, respectively. Cash used by operating activities was $60.4 million and $71.1 million during the six months ended June 30, 2024 and 2023, respectively. The Company had an accumulated deficit of $723.3 million and $659.6 million as of June 30, 2024 and December 31, 2023, respectively. To date, none of the Company's product candidates have been approved for sale and therefore the Company has not generated any revenue from sales of commercial products. Management expects operating losses to continue for the foreseeable future.

The Company has funded its operations to date primarily through private placements of its convertible preferred stock, common stocks and warrants, public offerings of its common stock, common warrants and pre-funded warrants, the sale of common stock under an "at the market offering," proceeds from the Loan Agreement, proceeds received from its collaboration arrangement, and non-dilutive grants from various nonprofit and governmental organizations. As of June 30, 2024, the Company had cash, cash equivalents and marketable securities of $55.7 million. The Company's cash, cash equivalents and marketable securities are not sufficient to fund the Company's planned operations for a period of 12 months from the date these condensed consolidated financial statements are issued.

To fund the Company's planned operations, the Company will need to raise additional capital. The Company intends to raise additional capital through private and public equity offerings, including its "at-the-market" offering program, debt financings, and potential future collaboration, license and development agreements. However, there can be no assurance that the Company will be successful in acquiring additional funding at levels sufficient to fund its operations or on terms acceptable to the Company or at all. If the Company is unsuccessful in its efforts to raise additional capital or if sufficient funds on acceptable terms are not available when needed, the Company could be required to significantly reduce operating expenses and delay, reduce the scope of or eliminate one or more of its development programs or its future commercialization efforts, out-license intellectual property rights to its product candidates and sell unsecured assets, or a combination of the above, any of which may have a material adverse effect on the Company's business, results of operations, financial condition and/or its ability to fund its scheduled obligations on a timely basis or at all. Failure to manage discretionary spending or raise additional capital, as needed, may adversely impact the Company's ability to achieve its intended business objectives. These conditions raise substantial doubt about the Company's ability to continue as a going concern for a period of one year from the date of the issuance of these condensed consolidated financial statements.

If the Company is unable to raise additional funds, secure a waiver or renegotiate the terms of its Loan Agreement, it expects to be in default of the minimum liquidity requirement in the fourth quarter of 2024. Upon such a default, the Company's existing cash, cash equivalents and marketable securities will only be sufficient to fund its operations into the fourth quarter of 2024. The accompanying condensed consolidated financial statements have been prepared assuming that the Company will continue as a going concern, which contemplates the realization of assets and the settlement of liabilities and commitments in the normal course of business. The condensed consolidated financial statements do not reflect any adjustments relating to the recoverability and classification of assets or the amounts and classification of liabilities that might be necessary if the Company is unable to continue as a going concern.

2. Summary of Significant Accounting Policies

Basis of Presentation

The accompanying interim condensed consolidated financial statements are unaudited and are comprised of the consolidation of the Company and its wholly-owned subsidiary. All intercompany balances and transactions have been eliminated in consolidation. The Company has no unconsolidated subsidiaries or investments accounted for under the equity method.

The accompanying interim condensed consolidated financial statements have been prepared in accordance with United States generally accepted accounting principles ("U.S. GAAP") and the rules and regulations of the Securities and Exchange Commission (the "SEC") for interim reporting.

The interim condensed consolidated financial statements are unaudited and, in the opinion of management, reflect all adjustments, consisting only of normal recurring adjustments, necessary for the fair presentation for interim reporting. The results of operations for any interim period are not necessarily indicative of results of operations for any future period.

Certain information and footnote disclosures typically included in annual financial statements prepared in accordance with U.S. GAAP have been condensed or omitted. Accordingly, these unaudited interim condensed consolidated financial statements should be read in conjunction with the Company's audited financial statements as of and for the year ended December 31, 2023, which are included in the Company's Annual Report on Form 10-K for the year ended December 31, 2023, as filed with the SEC on March 5, 2024.

Use of Estimates

The preparation of financial statements in conformity with U.S. GAAP requires management to make estimates and judgments that affect the reported amounts of assets and liabilities and disclosures of contingent liabilities as of the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Such estimates include, but are not limited to, determining the fair value of assets and liabilities, the fair value of right-of-use assets and lease liabilities, stock-based compensation expense, warrant liability, and including those related to revenue recognition, including but not limited to, transaction price and progress toward completion of performance obligation under the Company's contracts with customers. Management bases its estimates on historical experience and on various other market-specific and relevant assumptions that management believes to be reasonable under the circumstances. Actual results could differ from those estimates.

Fair Value of Financial Instruments

U.S. GAAP establishes a fair value hierarchy for instruments measured at fair value that distinguishes between assumptions based on market data (observable inputs) and the Company's own assumptions (unobservable inputs). Observable inputs are inputs that market participants would use in pricing the asset or liability based on market data obtained from sources independent of the Company. Unobservable inputs are inputs that reflect the Company's assumptions about the inputs that market participants would use in pricing the asset or liability and are developed based on the best information available in the circumstances.

Fair value is established as the exchange price, or exit price, representing the amount that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants. As a basis for considering market participant assumptions in fair value measurements, an established three-tier fair value hierarchy distinguishes between the following:

- Level 1 inputs are quoted prices in active markets that are accessible at the market date for identical assets or liabilities.
- Level 2 inputs are inputs other than quoted prices included within Level 1 that are observable for the asset or liability, either directly or indirectly.
- Level 3 inputs are unobservable inputs that reflect the Company's own assumptions about the assumptions market participants would use in pricing the assets or liability. Financial assets and liabilities are classified in their entirety based on the lowest level of input that is significant to the fair value measurement.

To the extent that the valuation is based on models or inputs that are less observable or unobservable in the market, the determination of fair value requires more judgment. Accordingly, the degree of judgment exercised by the Company in determining fair value is greatest for instruments categorized in Level 3. A financial instrument's level within the fair value hierarchy is based on the lowest level of any input that is significant to the fair value instrument.

The carrying amounts reflected on the condensed consolidated balance sheets for cash and cash equivalents, prepaid expenses and other current assets, accounts payable, accrued compensation and accrued liabilities approximate their fair values due to their short-term nature.

Debt Issuance Costs and Debt Discounts

Debt issuance costs include legal fees, accounting fees, and other direct costs incurred in connection with the execution of the Company's debt financing. Debt discounts represent costs paid to the lenders. Debt issuance costs and debt discounts are deducted from the carrying amount of the debt liability and are amortized to interest expense over the term of the related debt using the effective interest method.

Concentrations of Credit Risk

Financial instruments that potentially subject the Company to concentrations of credit risk consist of cash, cash equivalents and marketable securities. Cash, cash equivalents and marketable securities are invested through banks and other financial institutions in the United States. Such deposits may be in excess of federally insured limits. The Company maintains cash equivalents and marketable securities with various high-credit-quality and capitalized financial institutions. The Company has not experienced any credit losses in such accounts and does not believe it is exposed to any significant credit risk on these funds.

The Company's investment policy limits investments to certain types of securities issued by the U.S. government, its agencies, and institutions with investment-grade credit ratings and places restrictions on maturities and concentration by type and issuer. The Company is exposed to credit risk in the event of a default by the financial institutions holding its cash, cash equivalents and marketable securities and issuers of marketable securities to the extent recorded on the condensed consolidated balance sheets. As of June 30, 2024, the Company has no off-balance sheet concentrations of credit risk.

Other Risks and Uncertainties

The Company is subject to a number of risks similar to those faced by other clinical-stage biotechnology companies, including dependence on key individuals; the need to develop commercially viable therapeutics; competition from other companies, many of which are larger and better capitalized; and the need to obtain adequate additional financing to fund the development of its products. The Company currently depends on third-party suppliers for key materials and services used in its research and development manufacturing process and is subject to certain risks related to the loss of these third-party suppliers or their inability to supply the Company with adequate materials and services. Further, the Company is subject to broad market risks and uncertainties resulting from recent events, such as regional conflicts around the world, inflation, interest rates fluctuations and recession risks, market volatility, recent instability in the global financial markets, uncertainty as to the U.S. federal budget and the related potential for government shutdowns, as well as supply chain and labor shortages.

Cash, Cash Equivalents and Restricted Cash

Cash equivalents, which consist primarily of highly liquid investments with original maturities of three (3) months or less when purchased, are stated at fair value. These assets include investments in money market funds that invest in U.S. Treasury obligations, which are stated at fair value.

The Company has issued letters of credit under certain lease agreements that have been collateralized by cash deposits for an equal amount and are recorded within short-term restricted cash and deposits and other long-term assets on the condensed consolidated balance sheets based on the term of the underlying lease. Additionally, the Company's restricted cash includes payments received under the Coalition for Epidemic Preparedness Innovations ("CEPI") Funding Agreement, dated as of August 14, 2021 (the "CEPI Funding Agreement") and the Gates Foundation Grant Agreement (see Note 9). The Company will utilize the CEPI and Gates Foundation funds as it incurs expenses for services performed under the agreements.

The following table provides a reconciliation of cash, cash equivalents and short-term and long-term restricted cash reported within the condensed consolidated balance sheets that sum to the total of the same amounts shown in the condensed consolidated statements of cash flows (in thousands):

	June 30, 2024	December 31, 2023
Cash and cash equivalents	$ 50,900	$ 62,986
Restricted cash	1,274	2,299
Long-term restricted cash	4,695	5,290
Total cash, cash equivalents and restricted cash	$ 56,869	$ 70,575

Leases

The Company determines whether the arrangement is or contains a lease at the inception of the arrangement and if such a lease is classified as a financing lease or operating lease. The majority of the Company's leases are classified as operating leases. Leases with a term greater than one year are included in operating lease right-of-use ("ROU Assets"), lease liabilities, current portion, and lease liabilities, net of current portion in the Company's condensed consolidated balance sheets as of June 30, 2024 and December 31, 2023. The Company has elected not to recognize on the condensed consolidated balance sheets leases with terms of one year or less. Lease liabilities and their corresponding ROU Assets are recorded based on the present value of lease payments over the expected lease term. In determining the net present value of lease payments, the interest rate implicit in lease contracts is typically not readily determinable. As such, the Company estimates the appropriate incremental borrowing rate, which is the rate that would be incurred to borrow on a collateralized basis over a similar term an amount equal to the lease payments in a similar economic environment. Certain adjustments to the ROU Assets may be required for items such as initial direct costs paid or incentives received and impairment charges if the Company determines the ROU Asset is impaired.

The Company considers a lease term to be the non-cancelable period that it has the right to use the underlying asset, including any periods where it is reasonably assured the Company will exercise the option to extend the contract. Periods covered by an option to extend are included in the lease term if the lessor controls the exercise of that option.

The Company recognizes lease expense on a straight-line basis over the expected lease term.

The Company has elected not to separate lease and non-lease components for its leased assets and accounts for all lease and non-lease components of its agreements as a single lease component. The lease components resulting in a ROU Asset have been recorded on the condensed consolidated balance sheets and amortized as lease expense on a straight-line basis over the lease term.

Warrant Liability

The Company accounts for its warrants in accordance with ASC 815, Derivatives and Hedging - Contracts in Entity's Own Equity, as either liabilities or as equity instruments depending on the specific terms of the warrant agreement. The Common Warrants issued in connection with the April 2024 underwritten public offering (see Note 10) are classified as liabilities and are recorded at fair value. The warrants are subject to re-measurement at each settlement date and at each balance sheet date and any change in fair value is recognized in other expense (income), net in the condensed consolidated statements of operations and comprehensive loss. The Company estimates the fair value of the warranty liability using a Black-Scholes pricing model. We are required to make assumptions and estimates in determining an appropriate expected term, risk-free interest rate, volatility factor, dividend yield, and the fair value of common stock. Any significant adjustments to the unobservable inputs would have a direct impact on the fair value of the warrant liability.

Revenue Recognition

The Company performs research and development under collaboration, license, grant, and clinical development agreements. The Company's revenue primarily consists of collaboration and license agreements, and grant funding agreements. At contract inception, the Company analyzes a revenue arrangement to determine the appropriate accounting under U.S. GAAP. Currently, the Company's revenue arrangements represent customer contracts within the scope of ASC Topic 606, Revenue from Contracts with Customers (Topic 606) ("ASC 606") or grant funding agreements subject to the contribution guidance in ASC Topic 958-605, Not-for-Profit Entities – Revenue Recognition ("ASC 958-605"), which applies to business entities that receive contributions within the scope of ASC 958-605.

For collaboration and license agreements, the Company analyzes to assess whether such arrangements involve joint operating activities performed by parties that are both active participants in the activities and exposed to significant risks and rewards dependent on the commercial success of such activities. This assessment is performed throughout the life of the arrangement based on changes in the responsibilities of all parties in the arrangement. For

collaboration arrangements that are considered to be in the scope of the collaboration guidance and that contain multiple elements, the Company first determines which elements of the collaboration are deemed to be within the scope of the collaboration guidance and those that are more reflective of a vendor-customer relationship and, therefore, within the scope of the revenue with contracts with customers guidance. Elements of collaboration arrangements that are reflective of a vendor-customer relationship are accounted for pursuant to the revenue from contracts with customers guidance. The terms of the licensing and collaboration agreements entered into typically include payment of one or more of the following: non-refundable, up-front fees; development, regulatory, and commercial milestone payments; payments for manufacturing supply services; and royalties on net sales of licensed products. Each of these payments results in license, collaboration and other revenues, except for revenues from royalties on net sales of licensed products, which are classified as royalty revenues. The core principle of the accounting for revenue from contracts with customers guidance is to recognize revenues when promised goods or services are transferred to customers in an amount that reflects the consideration that is expected to be received in exchange for those goods or services.

In determining the appropriate amount of revenue to be recognized as the Company fulfills its obligations under each of its agreements, the Company performs the following steps: (i) identification of the promised goods or services in the contract; (ii) determination of whether the promised goods or services are performance obligations, including whether they are distinct in the context of the contract; (iii) measurement of the transaction price, including the constraint on variable consideration; (iv) allocation of the transaction price to the performance obligations based on estimated selling prices; and (v) recognition of revenue when (or as) the Company satisfies each performance obligation.

Amounts received prior to satisfying the revenue recognition criteria are recorded as deferred revenue in the Company's condensed consolidated balance sheets. If the related performance obligation is expected to be satisfied within the next twelve (12) months, this will be classified in current liabilities. Amounts recognized as revenue prior to receipt are recorded as contract assets in the Company's condensed consolidated balance sheets. If the Company expects to have an unconditional right to receive consideration in the next twelve (12) months, this will be classified in current assets. A net contract asset or liability is presented for each contract with a customer.

At contract inception, the Company assesses the goods or services promised in a contract with a customer and identifies those distinct goods and services that represent a performance obligation. A promised good or service may not be identified as a performance obligation if it is immaterial in the context of the contract with the customer, if it is not separately identifiable from other promises in the contract (either because it is not capable of being separated or because it is not separable in the context of the contract), or if the performance obligation does not provide the customer with a material right.

The Company considers the terms of the contract and its customary business practices to determine the transaction price. The transaction price is the amount of consideration to which the Company expects to be entitled in exchange for transferring promised goods or services to a customer. The consideration promised in a contract with a customer may include fixed amounts, variable amounts, or both. Variable consideration will only be included in the transaction price when it is not considered constrained, which is when it is probable that a significant reversal in the amount of cumulative revenue recognized will not occur.

If it is determined that multiple performance obligations exist, the transaction price is allocated at the inception of the agreement to all identified performance obligations, based on the relative standalone selling prices. The relative selling price for each performance obligation is estimated using objective evidence if it is available. If objective evidence is not available, the Company uses its best estimate of the selling price for the performance obligation.

Revenue is recognized when, or as, the Company satisfies a performance obligation by transferring a promised good or service to a customer. An asset is transferred when, or as, the customer obtains control of that asset, which for a service is considered to be as the services are received and used. The Company recognizes revenue over time by measuring the progress toward complete satisfaction of the relevant performance obligation, using an appropriate input or output method based on the nature of the good or service promised to the customer.

After contract inception, the transaction price is reassessed at every period end and updated for changes, such as resolution of uncertain events. Any change in the transaction price is allocated to the performance obligations on the same basis as at contract inception.

Management may be required to exercise considerable judgment in estimating revenue to be recognized. Judgment is required in identifying performance obligations, estimating the transaction price, estimating the stand-alone selling prices of identified performance obligations (which may include forecasted revenue, development timelines, reimbursement rates for personnel costs, discount rates and probabilities of technical and regulatory success) and estimating the progress towards satisfaction of performance obligations.

For grant funding agreements, grant revenue is recognized during the period that the research and development services occur, as qualifying expenses are incurred. The Company concluded that payments received under these grants represent nonreciprocal contributions, as described in ASC 958, Not-for-Profit Entities, and that the grants are not within the scope of ASC 606 as the organization providing the grant does not meet the definition of a customer. Grant revenue relates primarily to the CEPI Funding Agreement and the Gates Grant Agreement (see Note 9).

Government Contract

Contracts with government agencies, including cost reimbursement agreements, are assessed to determine if the contract should be accounted for as an exchange transaction or a contribution. A government contract is accounted for as a contribution if the government agency does not receive commensurate value in return for the assets transferred. Contributions are recognized as grant revenue when there is reasonable assurance that the contribution will be received, and all attaching conditions have been complied with.

The Company receives reimbursement under its U.S. government contract that support research and development of defined projects. The contract generally provides for reimbursement of approved costs incurred under the terms of the contracts. Revenue related to the cost reimbursement provisions under the Company's U.S. government contract is recognized as the qualified direct and indirect costs on the projects are incurred. The Company invoices under its U.S. government contract using the provisional rates in the government contract and thus is subject to future audits at the discretion of the government. The Company believes that government contract revenue for periods not yet audited has been recorded in amounts that are expected to be realized upon final audit and settlement. However, these audits could result in an adjustment to government contract revenue previously reported, which adjustments could be potentially significant. Costs incurred related to services performed under the contract are included as a component of research and development or selling, general and administrative expenses in the Company's condensed consolidated statements of operations. The Company's use of estimates in recording accrued liabilities for government contract activities (see "Use of Estimates" above) affects the revenue recorded from development funding and under the government contracts. Grant revenue related to the U.S. government contract relates to the BARDA Contract (see Note 9).

Income Taxes

The Company did not record income tax expense for the three and six months ended June 30, 2024 and 2023, respectively, as the Company expected to be in a cumulative taxable loss position in 2024 and 2023, and the net deferred tax assets are fully offset by a valuation allowance as it is not more likely than not that the benefit will be realized. As of June 30, 2024, the Company remains in a cumulative book loss position and does not have sufficient positive evidence to realize its net deferred tax assets. As such, the Company continues to maintain a full valuation allowance against its net deferred tax assets.

Effective January 1, 2022, a provision of the Tax Cuts and Jobs Act (TCJA) took effect creating a significant change to the treatment of research and experimental expenditures under Section 174 of the Internal Revenue Code (Sec. 174 expenses). Historically, businesses have had the option of deducting Sec. 174 expenses in the year incurred or capitalizing and amortizing the costs over five years. The new TCJA provision, however, eliminates this option and will require Sec. 174 expenses associated with research conducted in the United States to be capitalized and amortized over a five-year period. For expenses associated with research outside of the United States, Sec. 174 expenses will be capitalized and amortized over a 15-year period. This provision did not have a material impact on the Company's condensed consolidated financial statements.

Severance and Other Costs

Severance and other costs are comprised of employee separation costs and asset impairments. Employee separation costs principally consist of severance and stock-based compensation expense for the acceleration of stock awards.

The Company records severance charges based on whether the termination benefits are provided under an on-going benefit arrangement or under a one-time benefit arrangement. The Company accounts for on-going benefit arrangements, such as those documented by employment agreements, in accordance with ASC 712, Nonretirement Postemployment Benefits. Under ASC 712, liabilities for postemployment benefits are recorded at the time the obligations are probable of being incurred and can be reasonably estimated. The Company accounts for one-time employment benefit arrangements in accordance with ASC 420 Exit or Disposal Cost Obligations. One-time termination benefits are expensed at the date the entity notifies the employee. The Company recognized losses on

disposal of property and equipment, which was accounted for in accordance with ASC 360, Impairment of Long-Lived Assets.

Recent Accounting Pronouncements Adopted

In August 2020, the FASB issued ASU No. 2020-06, Debt - Debt with Conversion and Other Options (Subtopic 470-20) and Derivatives and Hedging - Contracts in Entity's Own Equity ("ASU 2020-06"). The standard eliminates the beneficial conversion and cash conversion accounting models for convertible instruments. It also amends the accounting for certain contracts in an entity's own equity that are currently accounted for as derivatives because of specific settlement provisions. In addition, the standard modifies how particular convertible instruments and certain contracts that may be settled in cash or shares impact the diluted EPS computation. The amendments in ASU 2020-06 are effective for the Company for fiscal years beginning after December 15, 2023, including interim periods within those fiscal years. Early adoption is permitted. The adoption of ASU 2020-06 on January 1, 2024 did not have a material impact on the Company's condensed consolidated financial statements and related disclosures.

Recently Issued Accounting Pronouncements Not Yet Adopted

In November 2023, the FASB issued ASU No. 2023-07, Segment Reporting (Topic 280): Improvements to Reportable Segment Disclosures ("ASU 2023-07"). The standard improves reportable segment disclosure requirements, primarily through enhanced disclosures about significant segment expenses. In addition, the guidance enhances interim disclosure requirements, clarifies circumstances in which an entity can disclose multiple segment measures of profit or loss, provides new segment disclosure requirements for entities with a single reportable segment and contains other disclosure requirements. The purpose of the guidance is to enable investors to better understand an entity's overall performance and assess potential future cash flows. The amendments in ASU 2023-07 are effective for the Company for fiscal years beginning after December 15, 2023, and interim periods within fiscal years beginning after December 15, 2024. Early adoption is permitted. The Company does not expect the adoption of ASU 2023-07 to have a material impact on its condensed consolidated financial statements and related disclosures.

In December 2023, the FASB issued ASU No. 2023-09, Income Taxes-Improvements to Income Tax Disclosures, which requires greater disaggregation of income tax disclosures related to the income tax rate reconciliation and income taxes paid ("ASU 2023-09"). ASU 2023-09 is effective for the Company for the year ending December 31, 2025, although early adoption is permitted. The Company is currently evaluating the impact of the provisions of ASU 2023-09.

3. Cash Equivalents and Marketable Securities

The amortized costs, unrealized gains and losses and fair values of cash equivalents and marketable securities were as follows (in thousands):

	June 30, 2024			
Description	**Amortized Cost**	**Unrealized Gains**	**Unrealized Losses**	**Fair Value**
Cash equivalents:				
Money market funds	$ 30,275	$ —	$ —	$ 30,275
Commercial paper	8,472	—	—	8,472
U.S. government treasuries	1,119	—	—	1,119
Total cash equivalents	39,866	—	—	39,866
Short-term marketable securities:				
U.S. government treasuries	1,840	—	(2)	1,838
Commercial paper	2,975	—	(1)	2,974
Total short-term marketable securities	4,815	—	(3)	4,812
Total	$ 44,681	$ —	$ (3)	$ 44,678

	December 31, 2023			
Description	**Amortized Cost**	**Unrealized Gains**	**Unrealized Losses**	**Fair Value**
Cash equivalents:				
Money market funds	$ 39,243	$ —	$ —	$ 39,243
Commercial paper	4,484	—	—	4,484
U.S. government debt securities	2,250	—	—	2,250
Total cash equivalents	45,977	—	—	45,977
Short-term marketable securities:				
Commercial paper	3,485	—	—	3,485
Corporate debt securities	939	—	—	939
U.S. government treasuries	9,861	5	(1)	9,865
U.S. government debt securities	2,000	—	(1)	1,999
Total short-term marketable securities	16,285	5	(2)	16,288
Total	$ 62,262	$ 5	$ (2)	$ 62,265

All marketable securities held as of June 30, 2024 had contractual maturities of less than one year. There have been no material realized gains or losses on marketable securities for the periods presented. As of June 30, 2024, the Company did not hold any individual securities in an unrealized loss position for 12 months or greater. The Company has the ability and intent to hold all marketable securities that have been in a continuous loss position until maturity or recovery. No significant facts or circumstances have arisen to indicate that there has been any significant deterioration in the creditworthiness of the issuers of the securities held by us, thus there has been no recognition of any other-than-temporary impairment for the periods presented. The Company has not recorded an allowance for credit losses as of June 30, 2024 and December 31, 2023.

See Note 4 for further information regarding the fair value of the Company’s financial instruments.

4. Fair Value Measurements

The Company's financial assets and liabilities subject to fair value measurements on a recurring basis and the level of inputs used in such measurements were as follows (in thousands):

	June 30, 2024			
Description	**Total**	**Level 1**	**Level 2**	**Level 3**
Assets				
Cash equivalents:				
Money market funds	$ 30,275	$ 30,275	$ —	$ —
Commercial paper	8,472	—	8,472	—
U.S. government treasuries	1,119	1,119	—	—
Total cash equivalents	39,866	31,394	8,472	—
Short-term marketable securities:				
U.S. government treasuries	1,838	1,838	—	—
Commercial paper	2,974	—	2,974	—
Total short-term marketable securities	4,812	1,838	2,974	—
Total	$ 44,678	$ 33,232	$ 11,446	$ —
Liabilities				
Warrant liability	$ 2,782	$ —	$ —	$ 2,782
Total	$ 2,782	$ —	$ —	$ 2,782

	December 31, 2023			
Description	**Total**	**Level 1**	**Level 2**	**Level 3**
Cash equivalents:				
Money market funds	$ 39,243	$ 39,243	$ —	$ —
Commercial paper	4,484	—	4,484	—
U.S. government debt securities	2,250	—	2,250	—
Total cash equivalents	45,977	39,243	6,734	—
Short-term marketable securities:				
Commercial paper	3,485	—	3,485	—
Corporate debt securities	939	—	939	—
U.S. government treasuries	9,865	9,865	—	—
U.S. government debt securities	1,999	—	1,999	—
Total short-term marketable securities	16,288	9,865	6,423	—
Total	$ 62,265	$ 49,108	$ 13,157	$ —

The Company measures the fair value of money market funds and U.S. government treasuries based on quoted prices in active markets for identical securities. Commercial paper, corporate debt securities, U.S. government treasuries, and U.S. government debt securities are valued taking into consideration valuations obtained from third-party pricing services. These pricing services utilize industry standard valuation models, including both income and market-based approaches, for which all significant inputs are observable, either directly or indirectly, to estimate fair value. These inputs include reported trades of, and broker/dealer quotes on, the same or similar securities, issuer credit spreads; benchmark securities; prepayment/default projections based on historical data; and other observable inputs.

The warrant liability in the table above consisted of the fair value of the Common Warrants (see Note 10) and was based on significant inputs not observable in the market, which represents a Level 3 measurement within the fair value hierarchy.

The following table provides a roll forward of the aggregate fair value of the warrant liability categorized with Level 3 inputs:

	Warrant Liability
Balance at December 31, 2023	—
Issuance of common warrants	$ 7,587
Change in fair value	(4,805)
Balance at June 30, 2024	$ 2,782

There were no transfers between Level 1 and Level 2 during the periods presented. See Note 3 for further information regarding the amortized cost of the Company's financial instruments.

5. Property and Equipment, Net

Property and equipment and related accumulated depreciation and amortization are as follows (in thousands):

	June 30, 2024	December 31, 2023
Computer equipment and software	$ 1,704	$ 1,704
Furniture and fixtures	2,723	2,723
Laboratory equipment	27,662	29,521
Leasehold improvements	15,452	15,733
	47,541	49,681
Less accumulated depreciation and amortization	(35,029)	(32,415)
Construction-in-progress	15	15
Total property and equipment, net	$ 12,527	$ 17,281

Depreciation and amortization expense was $1.6 million and $3.3 million for the three and six months ended June 30, 2024, respectively, and $1.9 million and $3.7 million for the three and six months ended June 30, 2023, respectively.

6. Commitments and Contingencies

Leases

The Company leases office and laboratory space in facilities at several locations:

Emeryville Lease

The Company's principal executive offices in Emeryville, California, consisting of office and laboratory space, are leased pursuant to a 120-month operating lease (the "Emeryville Lease"), which the Company entered into in January 2019, with the obligation to pay rent commencing in November 2019. In conjunction with signing the Emeryville Lease, the Company paid a cash security deposit of $0.6 million, which is recorded as a deposit on the Company's condensed consolidated balance sheet as of June 30, 2024. The Emeryville Lease includes a free rent period, an escalation clause for increased rent and a renewal provision allowing the Company to extend this lease for two additional five-year periods at the then market rental rate. The lessor provided the Company a tenant improvement allowance for a total of $4.0 million to complete the laboratory and office renovation. The Company has determined the tenant improvements to be lessee owned and therefore has recorded a $6.9 million ROU Asset and a $10.9 million lease liability on the condensed consolidated balance sheet as of June 30, 2024. The Company recorded a $7.3 million ROU Asset and a $11.6 million lease liability on the consolidated balance sheet as of December 31, 2023.

Pleasanton Leases

The Company leases office, cleanroom, and laboratory support manufacturing space in Pleasanton, California pursuant to a non-cancelable operating lease (the "Pleasanton Lease"), which the Company entered into in March 2017, with the obligation to pay rent commencing in December 2017. The Pleasanton Lease includes a free rent period, escalating rent payments and a term that expires on November 30, 2024. The Company may extend the lease term for a period of five years at the then market rental rate. The Company obtained an irrevocable letter of credit in March 2017 in the initial amount of approximately $1.0 million as a security deposit to the Pleasanton Lease, which may be drawn down by the landlord in the event the Company fails to fully and faithfully perform its obligations under the Pleasanton lease. The letter of credit may be reduced based on certain levels of cash and cash equivalents the Company holds. In October 2022, the letter of credit was reduced to a balance of $0.6 million. As of June 30, 2024, none of the irrevocable letter of credit amount had been drawn. The Pleasanton Lease further provides that the Company is obligated to pay to the landlord its proportionate share of certain basic operating costs, including taxes and operating expenses. In May 2024, the Company executed an amendment to the Pleasanton Lease, which extends its term through May 2025.

In connection with the Pleasanton Lease, the Company received a tenant improvement allowance of $1.2 million from the landlord for the costs associated with the design, development and construction of tenant improvements. The unamortized tenant improvement balance is recognized as a component of operating lease ROU Asset on the condensed consolidated balance sheets as of June 30, 2024 and December 31, 2023.

In addition, in May 2019, the Company entered into a 64-month non-cancelable operating lease for additional office space in Pleasanton, California, with an obligation to pay rent commencing in August 2019. In January 2022, the Company amended the lease to add additional leased space and extend the lease expiration date to February 2027.

Cambridge Lease

The Company's facility located at 40 Erie Street in Cambridge, Massachusetts is leased pursuant to a 67-month non-cancelable operating lease (as amended, the "40 Erie Lease"), which the Company entered into in February 2016, with an obligation to pay rent commencing in October 2016. The lessor provided the Company a tenant improvement allowance for a total of $2.1 million to complete the laboratory and office renovation. In September 2021, the Company executed an amendment to the 40 Erie Lease, which extends its term through April 2025 and provides for monthly base rent amounts, subject to annual increases over the term of the lease.

In conjunction with the move to the Boston facility, the Company ceased use of the 40 Erie Street facility, which triggered an impairment assessment. In connection with the impairment assessment, the Company recorded an impairment loss of $2.0 million related to the ROU Asset from the 40 Erie Lease, which is included in operating expenses on the condensed consolidated statement of operations and comprehensive loss for the year ended December 31, 2023. The Company is subject to the fixed rental fee payments for the existing lease through the remaining term until May 2025.

In conjunction with the 40 Erie Lease, as amended, the Company has paid a cash security deposit, which included amounts for the applicable last month's rent and has been classified as part of the operating lease ROU Assets. As of June 30, 2024 and December 31, 2023, the $0.3 million security deposit for the 40 Erie lease was recorded in prepaid expenses and other current assets on the Company's condensed consolidated balance sheets.

Boston Lease

The Company occupies a newly built facility in Boston, Massachusetts, with office and laboratory space, pursuant to a 120-month operating lease (as amended, the "Boston Lease"), which the Company entered into in September 2021. The Boston Lease includes a free rent period, an escalation clause for increased rent and a renewal provision allowing the Company to extend the Boston Lease for two additional five-year periods at the then market rental rate. The landlord provided the Company with a tenant improvement allowance of up to approximately $19.1 million for costs relating to the design, permitting and construction of improvements owned by the landlord. The Company incurred tenant improvement costs relating to the initial design and construction of the improvements before the commencement date which were accounted for as lease prepayments. The Company's obligation to pay rent commenced in July 2023, subject to free rent periods of three and nine months with respect to certain premises. The Company was provided early access to the premises to install fixtures and equipment 60 days prior to the anticipated rent commencement date. The Boston Lease expires in 2033. Under the Boston Lease, the Company is obligated to pay to the landlord its proportionate share of certain basic operating costs, including taxes and operating expenses. As a security deposit under the Boston Lease, the Company provided the landlord an irrevocable letter of credit in the amount of approximately $4.6 million, which is collateralized by a restricted cash deposit of $4.7 million, and which may be reduced in the fifth and seventh years of the Boston Lease. As of June 30, 2024 and 2023, none of the irrevocable letter of credit amount had been drawn.

The Boston Lease commenced in April 2023, when the Company was provided early access to the premises and gained control over the use of the underlying assets. Upon commencement, the Company recognized an ROU Asset of $59.3 million and a lease liability of $50.9 million on the condensed consolidated balance sheet. Upon commencement, the ROU Asset includes $8.4 million of lease prepayments made before the commencement date, which are primarily related to the lessor owned tenant improvement cost.

In September 2023, the Company amended the Boston Lease, whereby the lease term commenced on July 1, 2023 and expires on June 30, 2033.

The Company's operating leases include various covenants, indemnities, defaults, termination rights, security deposits and other provisions customary for lease transactions of this nature.

The components of lease costs, which were included in the Company's condensed consolidated statements of operations and comprehensive loss, were as follows (in thousands):

	Three Months Ended June 30,		Six Months Ended June 30,	
	2024	2023	2024	2023
Lease cost				
Operating lease cost	$ 3,206	$ 4,439	$ 6,427	$ 6,603
Short-term lease cost	13	—	31	$ —
Total lease cost	$ 3,219	$ 4,439	$ 6,458	$ 6,603

Supplemental information related to leases was as follows:

	Six Months Ended June 30,	
	2024	2023
Cash paid for amounts included in the measurement of lease liabilities (in thousands):		
Operating cash flows from operating leases	$ 6,295	$ 12,256
New right-of-use assets obtained in exchange for lease obligations (in thousands):		
Operating leases	$ 748	$ 59,320
Weighted-average remaining lease term (years):		
Operating leases	7.9	8.6
Weighted-average discount rate:		
Operating leases	10.2%	9.9%

As of June 30, 2024, minimum annual rental payments under the Company’s lease agreements are as follows (in thousands):

	Lease Financing Obligation
Year ending December 31,	
2024 (remaining six months)	$ 6,546
2025	11,420
2026	10,376
2027	10,466
2028	10,732
Thereafter	41,615
Total minimum payments	91,155
Less: Amounts representing interest expense	(29,167)
Present value of future minimum lease payments	61,988
Less: Current portion of lease liability	(7,159)
Noncurrent portion of lease liability	$ 54,829

Guarantees and Indemnifications

The Company, as permitted under Delaware law and in accordance with its amended and restated certificate of incorporation, as amended, and amended and restated bylaws, and pursuant to indemnification agreements with certain of its officers and directors, indemnifies its officers and directors for certain events or occurrences, subject to certain limits, with respect to which the officer or director is or was serving in such capacity at the Company’s request. The term of the indemnification period lasts as long as an officer or director may be subject to any proceeding arising out of acts or omissions of such officer or director in such capacity. The maximum amount of potential future indemnification is unlimited; however, the Company currently holds director and officer liability insurance. This insurance limits the Company’s exposure and may enable it to recover a portion of any future amounts paid. The Company believes that the fair value of these indemnification obligations is minimal. Accordingly, the Company has not recognized any liabilities relating to these obligations for any period presented.

7. Balance Sheet Components

Prepaid Expenses and Other Current Assets

Prepaid expenses and other current assets consist of the following (in thousands):

	June 30, 2024	December 31, 2023
Prepaid research and development-related expenses	$ 2,285	$ 3,904
Collaboration receivable	39	14
Prepaid insurance	453	940
Interest and other receivables	156	217
Facilities-related deposits	324	9
Other	467	778
Total prepaid expenses and other current assets	$ 3,724	$ 5,862

Deposits and Other Long-Term Assets

Deposits and other long-term assets consist of the following (in thousands):

	June 30, 2024	December 31, 2023
Lease security deposits	$ 609	$ 924
Total deposits and other long-term assets	$ 609	$ 924

8. Debt

In July 2022, the Company entered into a loan and security agreement (as amended, the "Loan Agreement") with Hercules Capital, Inc. ("Hercules") and Silicon Valley Bank ("SVB"), which provides the Company a 60-month term loan facility for up to $80.0 million in borrowing capacity across five potential tranches. At the closing of the Loan Agreement, the Company drew $20.0 million from the first tranche and drew an additional $10.0 million in March 2023. The remaining tranches provide up to $50.0 million borrowing capacity and become available upon the Company meeting certain milestones set forth in the Loan Agreement. In the fourth quarter of 2022, one milestone had been achieved, and the Company drew the available $10.0 million on December 15, 2023. As of June 30, 2024, no additional milestones had been met. The term loan is secured by substantially all of the Company's assets, other than intellectual property. There are no warrants associated with the Loan Agreement.

Borrowings under the Loan Agreement bear interest (i) at an annual cash rate equal to the greater of (x) the lesser of (1) the prime rate (as customarily defined) and (2) 5.50%, in either case, plus 3.15%, and (y) 7.15% and (ii) at an annual payment-in-kind rate which may equal 2.00%. The Company is required to make monthly interest-only payments prior to the amortization date of January 1, 2025, subject to a potential six-month and one-year extension upon satisfaction of certain conditions. The interest-only payment date has been extended an additional six months based on achievement of one of the milestones as set forth in the Loan Agreement. In addition, the Company paid a $150,000 facility charge upon closing, and must pay a facility charge equal to 0.50% of the principal amount of any borrowings made pursuant to the amounts under the last four tranches.

All unpaid principal and accrued and unpaid interest with respect to each term loan is due and payable in full on July 19, 2027. At the Company's option, the Company may prepay all or any portion of the outstanding borrowings, plus accrued and unpaid interest thereon and fees and expenses, subject to a prepayment premium ranging from zero to 2.5%, during the first three years after closing, depending on the year of such prepayment. Upon repayment of the term loan, the Company is required to make a final payment fee to the lenders equal to 5.75% of the aggregate original principal amount of the loan. Debt issuance costs have been treated as debt discounts on the Company's condensed consolidated balance sheets and together with the final payment are being amortized to interest expense throughout the life of the term loan using the effective interest rate method.

In March 2023, the Company entered into the First Amendment to Loan and Security Agreement, dated as of March 31, 2023, with SVB, Hercules, Hercules Capital Funding Trust 2002-1 (the "First Amendment" and the Loan Agreement as amended by the First Amendment, the "Amended Loan Agreement"), to amend the minimum liquidity requirements under the Loan Agreement, beginning on the earliest occurrence of certain milestones or April 1, 2024, and at all times thereafter, so long as the Company's market capitalization is no greater than $400.0 million, the

Company is subject to a minimum liquidity requirement equal to the then outstanding balance under the Amended Loan Agreement multiplied by 0.55 or 0.45, which multiplier depends on whether the Company achieves certain performance milestones. As of June 30, 2024, the Company has not achieved the performance milestones to be subject to the lower 0.45 multiplier.

The Company's obligations under the Amended Loan Agreement are subject to acceleration upon the occurrence of customary events of default, including payment default, insolvency and the occurrence of certain events having a material adverse effect on the Company, including (but not limited to) material adverse effects upon the business, operations, properties, assets or financial condition of the Company and its subsidiaries, taken as a whole. As of June 30, 2024, the Company is in compliance with all covenants in the Amended Loan Agreement, as amended.

As of June 30, 2024, there were debt discounts, unamortized issuance costs and unaccreted value of the final fee of $1.8 million which were recorded as a direct deduction from the term loan on the condensed consolidated balance sheet. Interest expense related to the Amended Loan Agreement was $1.3 million and $2.6 million, respectively, for the three and six months ended June 30, 2024, and $1.0 and $1.8 million, respectively, for the three and six months ended June 30, 2023. The effective interest rate on the term loan, including the amortization of the debt discount and issuance costs, and accretion of the final payment, was 13%. The components of the long-term debt balance are as follows (in thousands):

	June 30, 2024
Principal loan balance	$ 40,000
Final fee	2,300
Unamortized debt discount, issuance costs, and unaccreted value of final fee	(1,794)
Long term debt, net	$ 40,506

As of June 30, 2024, the estimated future principal payments due (excluding the final payment fee) are as follows (in thousands):

2024 (remaining six months)	$ —
2025	8,457
2026	18,030
2027	13,513
Total principal payments	$ 40,000

9. Collaboration and License Agreements and Grant Revenue

2seventy bio, Inc.

In August 2018, the Company entered into a Research Collaboration and License Agreement with bluebird bio, Inc. ("bluebird"). In November 2021, bluebird assigned the Research Collaboration and License Agreement (the "2seventy Agreement"), to its affiliate, 2seventy bio, Inc. ("2seventy"), in connection with an internal restructuring and subsequent spin-out of 2seventy. Under the terms of the 2seventy Agreement, the Company provided to 2seventy tumor-specific targets across several tumor types and, in certain cases, T cell receptors (TCR) directed to those targets. The Company received a non-refundable upfront payment of $20.0 million, and 2seventy also concurrently acquired 768,115 shares of the Company's Series C convertible preferred stock for $10.0 million at $13.04 per share. Per the 2seventy Agreement, 2seventy was also provided an option to acquire shares of the Company's common stock at the same price as all other investors in connection with the Company's initial public offering ("IPO"). In October 2018, 2seventy purchased 666,667 shares of the Company's common stock at the price to the public of $15.00 per share for a total of $10.0 million. Under the terms of the 2seventy Agreement, the Company is eligible to earn development, regulatory, and sales-based milestones in an amount of up to $1.2 billion, and single-digit royalties on sales of products that utilize the technology subject to the 2seventy Agreement. None of these events had occurred as of June 30, 2024, and no royalties were due from the sale of licensed products.

In August 2019, the Company entered into a First Amendment to the 2seventy Agreement, which extended the timeline for the Company and 2seventy to execute a Patient Selection Services Agreement from within one year to within two years after the Effective Date of the 2seventy Agreement. In August 2020, the Company entered into a Second Amendment, which extended the timeline of the Patient Selection Services Agreement to within three years and also extended the Tissue Analysis Period from February 28, 2021 to June 30, 2021. In April 2021, the Company entered into a Third Amendment, which removed the Patient Selection Services Agreement in its entirety and extended

the Tissue Analysis Period from June 30, 2021 to December 31, 2021. In November 2023, the Company entered into a Fourth Amendment, which extended the timeline of the Target Designation Period for a final TCR discovery campaign to January 31, 2024. The amendments were entered into for administrative purposes, and the Company determined the amendments were not a modification of contract under the contract with customers guidance.

Revenue was recognized when, or as, the Company satisfied its performance obligation by transferring the promised services to 2seventy. Revenue was recognized over time using a cost-based input method, based on internal labor cost effort to perform the research services, since the internal labor cost incurred over time was thought to best reflect the transfer of services to 2seventy. In applying a cost-based input method of revenue recognition, we used actual costs incurred relative to budgeted costs to fulfill the combined performance obligation. A cost-based input method of revenue recognition requires us to make estimates of costs to complete the performance obligation. The cumulative effect of any revisions to estimated costs to complete the performance obligation were recorded in the period in which changes are identified and amounts can be reasonably estimated.

There is no deferred revenue recorded on the condensed consolidated balance sheets in current liabilities as of June 30, 2024 and December 31, 2023 as collaboration revenue was fully recognized for the 2seventy Agreement during the year ended December 31, 2023. During the three and six months ended June 30, 2023, the Company recognized $0.3 million and $0.7 million, respectively, in collaboration revenue under the 2seventy Agreement.

There were no receivables or net contract assets recorded as of June 30, 2024 and December 31, 2023 associated with the 2seventy Agreement.

Gilead Sciences, Inc.

In January 2021, the Company entered into a Collaboration, Option and License Agreement (the "Gilead Collaboration Agreement") with Gilead Sciences, Inc. ("Gilead") to research and develop a vaccine-based immunotherapy as part of Gilead's efforts to find a curative treatment for HIV infection. Under the terms of the Gilead Collaboration Agreement, the Company granted to Gilead an exclusive, worldwide license to develop and commercialize a HIV-specific therapeutic vaccine utilizing the Company's technology. Gilead is responsible for conducting all development and commercialization activities beginning with a Phase 1 clinical trial, and the Company is responsible for contributing to preclinical research studies and participation in a joint steering committee (collectively, "research and development activities"). Concurrently with the execution of the Gilead Collaboration Agreement, the Company and Gilead entered into a Supply Agreement (the "Gilead Supply Agreement") under which the Company will supply research product and GMP product ("Product Supply") that may be required under the Gilead Collaboration Agreement until Gilead completes its first GMP product batch, and the Company will participate in a joint manufacturing team (collectively, "product supply activities"). In addition, the Company also concurrently entered into a Stock Purchase Agreement (the "Gilead Stock Purchase Agreement") under which Gilead acquired, in a private placement transaction, 1,169,591 shares of the Company's common stock. The common shares were issued to Gilead with certain registration rights and certain standstill and market stand-off provisions. The Company determined that these concurrent contracts represent a combined arrangement (the "Gilead Arrangement").

Under the Gilead Collaboration Agreement, the Company received a non-refundable upfront payment of $30.0 million. Under the Gilead Collaboration Agreement and the Gilead Supply Agreement, the Company will receive additional reimbursement payments for expenses incurred in the research and development activities and product supply activities. Under the Gilead Stock Purchase Agreement, the common shares were sold at a price of $25.65 per share for a total of $30.0 million. The Company's common stock at fair value on closing was $18.10 per share. If Gilead decides to move forward with development beyond the initial Phase 1 clinical trial (the "Option"), the Company will receive a $40.0 million non-refundable option fee and will be eligible to receive up to an aggregate of $685.0 million if certain clinical, regulatory and commercial milestones are achieved, as well as tiered royalties ranging from the mid-single digits to low double-digits on net sales of a therapeutic product utilizing its technology. None of these events had occurred as of June 30, 2024 and no royalties were due from the sale of licensed products.

The Company concluded that Gilead is a customer and therefore revenue recognition should be accounted for in accordance with ASC 606, because the Company granted to Gilead licenses to its intellectual property and will provide research and development services and Product Supply, all of which are outputs of the Company's ongoing activities, in exchange for consideration. The Option, if exercised by Gilead, will be considered a modification that increases the scope of the arrangement beyond the Option term.

The transaction price at the inception of the Gilead Collaboration Agreement consisted of the upfront payment of $30.0 million and the $30.0 million received for the sale of the Company's common stock. The sale of the common stock was not considered to be a performance obligation, as it was a separate financing component of the transaction. Accordingly, $21.2 million of the transaction price was allocated to the issuance of 1,169,591 shares of the Company's

common stock at fair value on closing of $18.10 per share and recorded in stockholders' equity. The remaining $8.8 million of the common stock purchase price in excess of the fair value of the shares received is added to the transaction price for the Gilead Collaboration Agreement. In addition, the initial transaction price includes estimated variable consideration for budgeted reimbursement of research and development costs and product supply. The variable consideration related to reimbursable costs and product supply has been constrained as of June 30, 2024 based on the current research and development plan forecast. The Company will re-evaluate the transaction price in each reporting period and as uncertain events are resolved or other changes in circumstances occur.

The Company determined that the variable consideration for the $40.0 million option exercise fee and for the development, regulatory, and sales-based milestones payments were probable of significant revenue reversal as their achievement was highly dependent on factors outside the Company's control. As a result, these payments were fully constrained and were not included in the transaction price. Any variable consideration related to sales-based milestones (including royalties) will be recognized when the related sales occur, as they were determined to relate predominantly to the exclusive licenses and know-how granted to Gilead.

For revenue recognition purposes, the Company determined that the duration of the contract began on the effective date in January 2021 and ends upon (i) the completion of the Option term, which is expected to end two to four years after the effective date, if the Option is not exercised or (ii) the expiration of the royalty-term on a product-by-product and country-by-country basis. The Company also analyzed the impact of Gilead terminating the agreement prior to the end of the Option term and determined, considering both quantitative and qualitative factors, that there were substantive non-monetary penalties to Gilead for doing so.

Revenue for the exclusive licenses and know-how was recognized on the effective date of the Gilead Collaboration Agreement at the point in time that the licenses are effective. The research and development activities and product combined performance obligation and the GMP product supply performance obligation are recognized over time when, or as, the Company transfers the promised goods and services to Gilead. Research and development service and product supply revenues will be recognized over time using a cost-based input method, based on internal and external labor cost effort to perform the services, costs to acquire research materials, and costs of product supply, since the costs incurred over time are thought to best reflect the transfer of goods and services to Gilead. In applying a cost-based input method of revenue recognition, we use actual costs incurred relative to estimated total costs to fulfill each performance obligation. A cost-based input method of revenue recognition requires us to make estimates of costs to complete the performance obligation. The cumulative effect of any revisions to estimated costs to complete the performance obligation and associated variable consideration will be recorded in the period in which changes are identified and amounts can be reasonably estimated. A significant change in these assumptions and estimates could have a material impact on the timing and amount of revenue recognized in future periods.

For the three and six months ended June 30, 2024, the Company did not record any license revenue and recorded a de minimis amount in collaboration revenue as a result of satisfying its performance obligations by transferring the promised goods and services for the Gilead Collaboration Agreement. For the three and six months ended June 30, 2023, the Company did not record any license revenue and recorded $0.1 million and $0.2 million, respectively, as collaboration revenue as a result of satisfying its performance obligations by transferring the promised goods and services estimated by the costs incurred for the Gilead Collaboration Agreement. There was no contract asset recorded on the condensed consolidated balance sheets as of June 30, 2024 or December 31, 2023. There was a de minimis amount recorded as deferred revenue as of June 30, 2024 and December 31, 2023 associated with the Gilead Collaboration Agreement.

Changes in the deferred revenue balance during the six months ended June 30, 2024 for the Gilead Collaboration Agreement are as follows (in thousands):

	Deferred Revenue
Balance at December 31, 2023	$ 51
Additions	—
Deductions	(33)
Balance at June 30, 2024	$ 18

There was de minimis of receivables recorded on the condensed consolidated balance sheets as a current asset in the prepaid expenses and other current assets balance as of June 30, 2024 and December 31, 2023, associated with the Gilead Collaboration Agreement.

Arbutus Biopharma Corporation

In October 2017, the Company entered into an Exclusive License Agreement with Arbutus and its wholly-owned subsidiary, Protiva Biotherapeutics Inc. Certain terms of the agreement were modified by amendment in July 2018. Under the license agreement, the Company has an exclusive license to utilize certain Arbutus intellectual property, including patents and know-how relating to immunotherapy. During the three and six months ended June 30, 2024 and 2023, the Company had no research and development expense under the agreement. The Company is obligated to pay Arbutus certain milestone payments up to $123.5 million on achievement of specified events, and royalties on sales of its licensed products. Following the acceptance of our investigational new drug application for GRANITE by the FDA, the Company made a $2.5 million development milestone payment to Arbutus in September 2018 that was recorded as research and development expense. In August 2019, a milestone was met following the initial patient treatment of SLATE in the Company's GO-005 clinical trial. In 2019, the Company recorded $3.0 million as research and development expense in connection with the milestone. None of the other events had occurred as of June 30, 2024, and no royalties were due from the sale of licensed products.

Non-Profit Hospital Cancer Center

In January 2016, the Company entered into an Exclusive License Agreement with a non-profit hospital cancer center. Under the license agreement, the Company has an exclusive license to utilize certain patents and know-how relating to immunotherapy for an insignificant upfront payment, cash milestone payments on achievement of specified events, and a low single digit royalty on sales of licensed products. The achievement of the milestones and payment of royalties is dependent upon obtaining regulatory approval. Upon achievement of a milestone related to the Company's Phase 1 clinical trial for GRANITE, GO-004, in December 2018 the Company recorded an insignificant amount to research and development expense for amounts owed to the Hospital Cancer Center, which was paid to the hospital in February 2019. None of the other milestone events had occurred as of June 30, 2024 and no royalties were due from the sales of licensed products.

Genevant Sciences GmbH

In October 2020, the Company entered into an Option and License and Development Agreement (as amended, the "2020 Genevant License Agreement") with Genevant Sciences GmbH ("Genevant"), pursuant to which Genevant granted the Company exclusive license rights under certain intellectual property related to Genevant's LNP technology for a single therapeutic indication, and the Company agreed to pay Genevant an initial payment of $2.0 million, up to an aggregate of $71.0 million in specified development, regulatory, and commercial milestones, and low to mid-single digit royalties on net sales of licensed products. The upfront payment of $2.0 million was included in research and development expense for the year ended December 31, 2020. Genevant is a spin-off of Arbutus, and the 2020 Genevant License Agreement expands Gritstone's intellectual property rights to such LNP technology originally obtained pursuant to the Company's license agreement with Arbutus. Prior to the 2020 Genevant License Agreement, the Company licensed Arbutus' LNP technology for indications in the oncology space. The remainder of Arbutus' IP portfolio was transferred to Genevant in the spin-off. In March 2022, a milestone in the amount of $1.0 million was met, which was included in research and development expense for the year ended December 31, 2022. None of the other milestone events under the 2020 Genevant License Agreement had occurred as of June 30, 2024.

Pursuant to the 2020 Genevant License Agreement, Genevant also granted the Company certain options to license the LNP technology for additional therapeutic indications of up to $1.5 million for each indication and $1.0 million to extend the option term. The 2020 Genevant License Agreement continues in effect until the last to expire royalty term or early termination. It is terminable by the Company for convenience with 90 days prior written notice or immediately if based on certain product safety or efficacy or regulatory criteria. Either party may terminate the agreement for material breach, subject to a cure period, and Genevant may terminate the agreement if the Company challenges a licensed patent. In August 2023, the 2020 Genevant License Agreement was amended to terminate the options to license the LNP technology for additional indications.

In January 2021, the Company entered into a Non-Exclusive License and Development Agreement (the "2021 Genevant License Agreement") with Genevant. Pursuant to the 2021 Genevant License Agreement, the Company obtained a nonexclusive license to Genevant's LNP technology to develop and commercialize self-amplifying RNA ("samRNA") vaccines against SARS-CoV-2, the virus that causes COVID-19. Under the 2021 Genevant License Agreement, the Company made a $1.5 million upfront payment to Genevant, and Genevant is eligible to receive from the Company up to an aggregate of $191.0 million in contingent milestone payments per product, plus certain tiered royalties, upon achievement of development and commercial milestones. In certain scenarios, in lieu of milestones and royalties, Genevant will be entitled to a percentage of amounts that the Company receives from sublicenses under the 2021 Genevant License Agreement, subject to certain conditions. In March 2021, a milestone in the amount of

$1.0 million was met following the initial patient treatment in the Phase 1 clinical trial conducted through the NIAID-supported Infectious Diseases Clinical Research Consortium ("IDCRC"). Both the $1.5 million upfront and $1.0 million milestone payments were recorded as research and development expense for the year ended December 31, 2021. None of the other milestone events under the 2021 Genevant License Agreement had occurred as of June 30, 2024.

In August 2023, the Company entered into an Option and Non-Exclusive License and Development Agreement (the "2023 Genevant License Agreement") with Genevant. Pursuant to the 2023 Genevant License Agreement, the Company obtained a multi-year option for a non-exclusive license under Genevant's LNP technology on a pathogen-by-pathogen basis to develop and commercialize samRNA vaccines against infectious disease. Under the 2023 Genevant License Agreement, (i) the Company made a $2.5 million upfront payment to Genevant, recorded as research and development expense for the year ended December 31, 2023, and (ii) Genevant is eligible to receive from the Company option maintenance and exercise fees in the single digit millions and up to an aggregate of $136.0 million in contingent milestone payments per product, subject to increase for multi-pathogen products and in other specified circumstances, and royalties ranging from the mid to high single digits on future product sales. If Gritstone outlicenses an applicable infectious disease program, in lieu of certain of these payments, Genevant may be entitled to a percentage of amounts that Gritstone receives from its sublicensee. None of the milestone events under the 2023 Genevant License Agreement had occurred as of June 30, 2024.

Coalition for Epidemic Preparedness Innovations

In August 2021, the Company entered into the CEPI Funding Agreement with CEPI, under which CEPI agreed to provide funding of up to $20.6 million to the Company to advance the Company's CORAL program, a second-generation COVID-19 vaccine program, with an initial clinical trial in South Africa. Under the terms of the agreement, CEPI is funding a multi-arm Phase 1 clinical trial evaluating the CORAL program's samRNA vaccine in naïve, convalescent, and HIV+ patients. The study is evaluating three different samRNA vaccine constructs that each target both the spike protein and other SARS-CoV-2 targets and are designed to drive both robust B and T cell immune responses. The funding will also support pre-clinical studies, scale-up and formulation development to enable manufacturing of large quantities of stable vaccine product.

Under the terms of the CEPI Funding Agreement, among other things, the Company and CEPI agreed on the importance of global equitable access to the vaccine produced pursuant to the CEPI Funding Agreement. The vaccine, if approved, is expected to be made available to the COVAX Facility for procurement and allocation. The COVAX Facility aims to deliver equitable access to COVID-19 vaccines for all countries, at all levels of development, that wish to participate.

The scope and continuation of the CEPI Funding Agreement may be amended depending on ongoing developments of the COVID-19 outbreak and the success of the Company's COVID-19 vaccine candidate developed under the CEPI Funding Agreement relative to other third-party COVID-19 vaccine candidates or treatments. If the World Health Organization ("WHO"), CEPI or a regulatory authority having jurisdiction over a clinical trial performed under the CEPI Funding Agreement determines that a third-party product candidate has substantially greater potential than the Company's COVID-19 vaccine candidate developed under the CEPI Funding Agreement and should be prioritized instead for a particular trial, the Company must consider in good faith any written request of CEPI not to proceed with a clinical trial of such COVID-19 vaccine candidate; however the determination of whether or not to proceed with such trial shall be made by the Company in its sole discretion. In addition, CEPI has the right to unilaterally terminate the CEPI Funding Agreement upon prior written notice if CEPI determines that (i) there are material safety, regulatory, scientific misconduct or ethical issues with the project undertaken by the Company under the CEPI Funding Agreement, (ii) the project undertaken by the Company under the CEPI Funding Agreement should be terminated, (iii) the Company becomes unable to discharge its obligations under the CEPI Funding Agreement, (iv) the Company fails to meet certain criteria set forth in the CEPI Funding Agreement, or (v) the Company commits fraud or a financial irregularity, as such terms are defined in the CEPI Funding Agreement.

In December 2021, the Company and CEPI entered into an amendment to the CEPI Funding Agreement, under which CEPI agreed to provide additional funding up to $5.0 million, for a total of up to $25.6 million, to the Company to conduct a Phase 1 clinical trial of the Company's Omicron vaccine candidate in South Africa. In January 2024, the Company and CEPI entered into a second amendment to the CEPI Funding Agreement, which repurposed certain unspent funds for preclinical immunogenicity studies for use for preclinical challenge studies.

CEPI advances grant funds upon request by the Company consistent with the agreed upon amounts and schedules as provided in the CEPI Funding Agreement. The first tranche of funding of $11.3 million was received in September 2021, the second tranche of funding of $2.7 million was received in April 2022, the third tranche of funding

of $1.2 million was received in June 2023, the fourth tranche of funding of $2.4 million was received in December 2023, and the fifth tranche of funding of $0.3 million was received in April 2024.

Payments received in advance that are related to future performance are deferred and recognized as grant revenue when the research and development activities are performed. Cash payments received under the CEPI Funding Agreement are restricted as to their use until expenditures contemplated in the agreement are incurred. During the three and six months ended June 30, 2024, the Company recognized grant revenue of $0.9 million and $1.9 million, respectively, and $1.1 million and $2.6 million, respectively, during the three and six months ended June 30, 2023 under the CEPI Funding Agreement. As of June 30, 2024 and December 31, 2023, short-term restricted cash and short-term deferred revenue of $0.7 million and $2.3 million, respectively, were recorded on the condensed consolidated balance sheets. Deferred revenue will be recognized over the period in which the CEPI Funding Agreement activities related to the tranches of funding are expected to take place, which is currently estimated to be through the first quarter of 2025.

Changes in the deferred revenue balance during the six months ended June 30, 2024 for the CEPI Funding Agreement are as follows (in thousands):

	Deferred Revenue
Balance at December 31, 2023	$ 2,291
Additions	295
Deductions	(1,921)
Balance at June 30, 2024	$ 665

Gates Foundation

In November 2021, the Company entered into a Grant Agreement with the Gates Foundation (the "Gates Grant Agreement"), which provides funding for the Company's development of an optimal immunogen in the context of a therapeutic human papillomavirus ("HPV") vaccine. In consideration for the work to be performed, the Gates Foundation provided the Company with an upfront payment of $2.2 million in December 2021, and an additional $0.7 million was received in April 2023. In November 2023, the Company and the Gates Foundation entered into an amendment to the Gates Grant Agreement, which extended the end date to March 31, 2024.

Payments received in advance that are related to future performance are deferred and recognized as grant revenue when the research and development activities are performed. Cash payments received under the Gates Grant Agreement are restricted as to their use until expenditures contemplated in the funding agreement are incurred. During the three and six months ended June 30, 2024, the Company recognized $0 and $0.4 million, respectively, and $0.5 million and $0.9 million, respectively, during the three and six months ended June 30, 2023 in revenue under the Gates Grant Agreement. As of June 30, 2024 and December 31, 2023, short-term restricted cash and short-term deferred revenue of an insignificant amount were recorded on the condensed consolidated balance sheets. The grant revenue was fully recognized for the Gates Grant Agreement as of March 31, 2024.

Biomedical Advanced Research and Development Authority

In September 2023, the Company entered into a contract (the "BARDA Contract") with the Biomedical Advanced Research and Development Authority ("BARDA"), part of the Administration for Strategic Preparedness and Response in the U.S. Department of Health and Human Services. Under the BARDA Contract, the Company may be eligible to receive funding of up to an estimated $433.0 million to conduct a 10,000-participant randomized Phase 2b comparative clinical trial evaluating the Company's next-generation samRNA vaccine candidate containing Spike plus other viral targets to protect against COVID-19. The BARDA Contract could result in payments to the Company of up to approximately $433.0 million. The BARDA Contract consists of a base period (currently ending on or before March 31, 2025, though this period may be extended) and a total contract period-of-performance (base period plus two stages gated at BARDA's discretion) of up to approximately four years. The base period for the BARDA Contract includes government funding of up to approximately $10.0 million for performance of certain milestones such as preparation of protocol synopsis and submission of an investigational new drug application. Following successful completion of the base period, the BARDA Contract provides for up to approximately $423.0 million of additional BARDA funding for two stages gated at BARDA's discretion in support of the clinical trial execution and additional analyses for the clinical trial. BARDA instructed the Company to apply for funding for these two stages under a new award administered by the Rapid Response Partnership Vehicle ("RRPV Consortium"), which would be awarded at BARDA's discretion with BARDA funds. As of June 30, 2024, BARDA and Gritstone have amended the base period to extend to March 31, 2025. Also, as of June 30, 2024, BARDA had not made the decision to proceed with either of the two stages nor has the Company been awarded a new award by or entered into a new agreement with the RRPV

Consortium, terms and financials of which may be different from the original BARDA Contract. The BARDA Contract contains terms and conditions that are customary for contracts with BARDA of this nature, including provisions giving the government the right to terminate the contract at any time for its convenience, and similar terms and conditions are expected under a potential agreement with the RRPV Consortium.

The Company recognized $0 and $0.4 million, respectively, of grant revenue under the BARDA Contract for the three and six months ended June 30, 2024, and the $0.4 million was received under the BARDA Contract in March 2024.

10. Stockholders' Equity

The Company's amended and restated certificate of incorporation, as amended provides for 300,000,000 shares of common stock and 10,000,000 shares of preferred stock authorized for issuance, each with a par value of $0.0001 per share.

As of June 30, 2024 and December 31, 2023, no shares of preferred stock were issued and outstanding.

As of June 30, 2024 and December 31, 2023, there were 117,787,732 and 97,585,415 shares of common stock issued and outstanding, respectively. Holders of the Company's common stock are entitled to one vote per share.

Sale of Common Stock and Pre-Funded Warrants

In December 2020, the Company entered into two private placement financing transactions (collectively, the "First PIPE Financing"), as follows: (i) to sell 5,543,351 shares of its common stock at a price of $3.34 per share and pre-funded warrants (the "Warrants") to purchase 27,480,719 shares of common stock at a price of $3.34 per share (of which $3.33 per share was prepaid by each purchaser), and (ii) to sell an additional 4,043,127 shares of its common stock at a price per share of $3.71. In connection with the First PIPE Financing, the Company received aggregate net proceeds of approximately $119.8 million. The Warrants are exercisable upon issuance at an exercise price of $0.01 per share.

The outstanding Warrants generally may not be exercised if the holder's aggregate beneficial ownership would be more than 9.99% of the total issued and outstanding shares of the Company's common stock following such exercise. The exercise price and number of shares of common stock issuable upon the exercise of the Warrants (the "Warrant Shares") are subject to adjustment in the event of any stock dividends and splits, reverse stock split, recapitalization, reorganization or similar transaction, as described in the Warrant agreements. Under certain circumstances, the Warrants may be exercisable on a "cashless" basis. In connection with the issuance and sale of the common stock and Warrants, the Company granted the purchasers certain registration rights with respect to the Warrants and the Warrant Shares.

The Warrants were classified as a component of permanent stockholders' equity within additional paid-in-capital and were recorded at the issuance date using a relative fair value allocation method. The Warrants are equity classified because they are freestanding financial instruments that are legally detachable and separately exercisable from the equity instruments, are immediately exercisable, do not embody an obligation for the Company to repurchase its shares, permit the holders to receive a fixed number of common shares upon exercise, are indexed to the Company's common stock and meet the equity classification criteria. In addition, such Warrants do not provide any guarantee of value or return. The Company valued the Warrants at issuance, concluding their sales price approximated their fair value, and allocated net proceeds from the sale proportionately to the common stock and Warrants, of which $87.7 million, net of issuance costs, was allocated to the Warrants and recorded as a component of additional paid-in-capital.

In September 2021, the Company completed a PIPE financing transaction, in which it sold 5,000,000 shares of its common stock at a price of $11.00 per share pursuant to a securities purchase agreement entered into on September 16, 2021 (the "Second PIPE Financing"). The Company received aggregate net proceeds of approximately $52.7 million after deducting placement agent commissions and offering expenses payable by the Company. In connection with the issuance and sale of the common stock, the Company agreed to file a registration statement with the SEC registering the resale of the shares of common stock issued in the Second PIPE Financing.

In March 2022, the Company filed a Registration Statement on Form S-3 with the SEC (the "2022 Shelf Registration Statement"), covering the offering of up to $250.0 million of common stock, preferred stock, debt securities, warrants and units. The 2022 Shelf Registration Statement included a prospectus supplement covering the issuance and sale of up to $100.0 million of the Company's common stock, from time to time, through an "at-the-market" offering program (the "2022 ATM Offering Program") under the Securities Act. The SEC declared the 2022 Shelf Registration Statement effective as of May 6, 2022.

In connection with the 2022 ATM Offering Program, in March 2022, the Company also entered into a sales agreement (the "2022 Sales Agreement") with Cowen and Company, LLC ("Cowen"), pursuant to which Cowen will act as the Company's sales agent and, from time to time, offer and sell shares of the Company's common stock having an aggregate offering price of up to $100.0 million. Cowen is entitled to compensation for its services equal to up to 3.0% of the gross proceeds of any shares of common stock sold under the 2022 Sales Agreement. In addition, the Company agreed to reimburse a portion of Cowen's expenses in connection with the 2022 ATM Offering Program up to $50,000. As of December 31, 2023, the Company has received aggregate proceeds from its 2022 ATM Offering Program of $27.5 million, net of commissions and offering costs, pursuant to the issuance of 10,230,628 shares of its common stock. As of June 30, 2024, the Company has received aggregate proceeds from its 2022 ATM Offering Program of $33.1 million, net of commissions and offering costs, pursuant to the issuance of 17,182,864 shares of its common stock.

In October 2022, the Company completed a PIPE financing transaction, in which it sold 6,637,165 shares of its common stock at a price of $2.26 per share pursuant to a securities purchase agreement entered into on October 24, 2022 and pre-funded warrants (the "Warrants") to purchase 13,274,923 shares of common stock at a price of $2.26 per share (of which $2.2599 per share was prepaid by each purchaser) (the "Third PIPE Financing"). The Company received aggregate net proceeds of approximately $42.4 million after deducting placement agent commissions and offering expenses payable by the Company. In connection with the issuance and sale of the common stock, the Company agreed to file a registration statement with the SEC registering the resale of the shares of common stock issued in the Third PIPE Financing. The Warrants are exercisable upon issuance at an exercise price of $0.0001 per share.

The outstanding Warrants generally may not be exercised if the holder's aggregate beneficial ownership would be more than 9.99% of the total issued and outstanding shares of the Company's common stock following such exercise. The exercise price and number of shares of common stock issuable upon the exercise of the Warrants (the "Warrant Shares") are subject to adjustment in the event of any stock dividends and splits, reverse stock split, recapitalization, reorganization or similar transaction, as described in the Warrant agreements. Under certain circumstances, the Warrants may be exercisable on a "cashless" basis. In connection with the issuance and sale of the common stock and Warrants, the Company granted the purchasers certain registration rights with respect to the Warrants and the Warrant Shares.

The Warrants were classified as a component of permanent stockholders' equity within additional paid-in-capital and were recorded at the issuance date using a relative fair value allocation method. The Warrants are equity classified because they are freestanding financial instruments that are legally detachable and separately exercisable from the equity instruments, are immediately exercisable, do not embody an obligation for the Company to repurchase its shares, permit the holders to receive a fixed number of common shares upon exercise, are indexed to the Company's common stock and meet the equity classification criteria. In addition, the Warrants do not provide any guarantee of value or return. The Company valued the Warrants at issuance, concluding their sales price approximated their fair value, and allocated net proceeds from the sale proportionately to the common stock and Warrants, of which $28.2 million, net of issuance costs, was allocated to the Warrants and recorded as a component of additional paid-in-capital.

In April 2024 the Company completed an underwritten public offering transaction in which it issued and sold 8,333,333 shares of common stock and accompanying common warrants to purchase up to 8,333,333 shares of common stock at a per share exercise price of $1.65, at a combined purchase price of $1.50 per share and accompanying common warrant, and to a certain investor in lieu of common stock, pre-funded warrants to purchase up to 13,334,222 shares of common stock at a per share exercise price of $0.0001 and accompanying common warrants to purchase up to 13,334,222 shares of common stock at a combined purchase price of $1.4999 per pre-funded warrant and accompanying common warrant. The Company received gross proceeds from the offering in the amount of $32.5 million, before deducting underwriting discounts and commissions and estimated expenses. The Company concluded that the common warrants do not meet the equity contract scope exception. The liability associated with the common warrants is recorded as warrant liability in the condensed consolidated balance sheet as of June 30, 2024. As a result, the Company allocated $7.6 million of the gross proceeds from the offering to the fair value of the common warrants, which was recorded as a warrant liability, and the remaining $24.9 million was allocated to the common shares and pre-funded warrants and recorded as permanent equity.

The valuation of the common warrants is adjusted to fair value (Level 3) at each subsequent balance sheet date until the common warrants are settled or expired. To this date, due primarily to fluctuations in the Company's common stock price between the issuance date and June 30, 2024, the warrant liability was revalued to $2.8 million as of June 30, 2024. The change in fair value of $4.8 million has been recorded as other income.

The Company calculated the fair value of the Common Warrants using the Black-Scholes option pricing model with the following inputs:

	Common Warrants	
	April 4, 2024 (issuance)	June 30, 2024
Common stock price	$ 1.03	$ 0.62
Expected dividend yield	—%	—%
Expected term (years)	1.00	0.76
Risk-free interest rate	5.0%	5.1%
Expected volatility	120.5%	135.6%

Common Stock Warrants

As of June 30, 2024, the following warrants and pre-funded warrants to purchase shares of the Company's common stock were issued and outstanding:

Warrant Type	Issue Date	Expiration Date	Exercise Price	Number of Warrants Outstanding
Pre-funded warrants	December 28, 2020	None	$ 0.01	3,204,934
Pre-funded warrants	October 24, 2022	None	$ 0.0001	13,274,923
Pre-funded warrants	April 4, 2024	None	$ 0.0001	13,334,222
Common warrants	April 4, 2024	April 4, 2025	$ 1.65	21,667,555
				51,481,634

There were 4,009,399 pre-funded warrants exercised during the three and six months ended June 30, 2024. There were 2,859,971 pre-funded warrants exercised during the three and six months ended June 30, 2023 resulting in the Company issuing 2,849,405 shares of common stock due to net exercise of some of the pre-funded warrants.

11. Stock-Based Compensation

Award Incentive Plans

In August 2015, the Company's board of directors approved the 2015 Equity Incentive Plan ("2015 Plan"). In connection with the Company's IPO and the effectiveness of the 2018 Award Incentive Plan ("2018 Plan"), discussed below, the 2015 Plan terminated. The 92,815 shares of common stock that were then unissued and available for future issuance under the 2015 Plan became available under the 2018 Plan.

In September 2018, the Company's board of directors approved the 2018 Plan. Under the 2018 Plan, a total of 2,690,000 shares of common stock were initially reserved for issuance under the 2018 Plan, plus the number of shares remaining available for future awards under the 2015 Plan, as of the effective date of the 2018 Plan. The number of shares of common stock reserved for issuance under the 2018 Plan automatically increases on January 1 of each year, beginning on January 1, 2019 and continuing through and including January 1, 2028, by 4% of the total number of shares of the Company's outstanding stock on December 31 of the preceding calendar year, or a lesser number of shares determined by the Company's board of directors. The 2018 Plan provides, among other things, for the grant of options, stock appreciation rights, restricted stock awards, restricted stock unit awards and performance bonus awards.

The maximum number of shares that may be issued upon the exercise of stock options under the 2018 Plan is 45,000,000.

The Company's board of directors has the authority to determine to whom options will be granted, the number of shares, the term, and the exercise price. If an individual owns stock representing 10% or more of the outstanding shares, the price of each share shall be at least 110% of the fair market value, as determined by the board of directors. Options granted have a term of up to 10 years and generally vest over a 4-year period with a straight-line vesting.

Material Features of the 2021 Employment Inducement Incentive Award Plan

In April 2021, the Company's board of directors adopted the 2021 Employment Inducement Incentive Award Plan (the "2021 Plan"), pursuant to Nasdaq Listing Rule 5635(c)(4). The principal purpose of the 2021 Plan is to promote the success and enhance the value of the Company by inducing new employees to commence employment with us, and by aligning the individual interests of new employees with the interests of our stockholders. Awards granted under the 2021 Plan are intended to constitute "employment inducement awards" under Nasdaq Listing Rule

5635(c)(4), and, therefore, the 2021 Plan is intended to be exempt from the Nasdaq Listing Rules regarding shareholder approval of stock option and stock purchase plans. A total of 790,400 shares of our common stock were initially reserved for issuance under the 2021 Plan. The 2021 Plan provides for the grant of non-qualified stock options, restricted stock units, restricted stock awards, stock appreciation rights, and other stock-based and cash-based awards. The 2021 Plan does not provide for the grant of incentive stock options. Awards under the 2021 Plan may be granted to eligible employees who are either new employees or who are commencing employment with the Company or one of our subsidiaries following a bona fide period of non-employment with the Company, and for whom such awards are granted as a material inducement to commencing employment with the Company or one of its subsidiaries. Awards under the 2021 Plan may not be granted to the Company's consultants or non-employee directors.

The 2021 Plan is administered by our board of directors and, to the extent our board of directors delegates its authority to it, our compensation committee. In the event of a change in control in which the successor corporation refuses to assume or substitute any outstanding award under the 2021 Plan, the vesting of such award will accelerate in full. The Company's board of directors may terminate, amend, or modify the 2021 Plan at any time, provided that no termination or amendment may materially impair any rights under any outstanding award under the 2021 Plan without the consent of the holder.

On April 21, 2022, the Company's board of directors increased the number of shares available under the 2021 Plan by 700,000 shares. On February 2, 2023, the Company's board of directors increased the number of shares available under the 2021 Plan by 1,300,000 shares.

Stock Option Activity

A summary of the 2018 Plan and 2021 Plan activity is as follows:

		Options Outstanding			
	Number of Shares Available for Issuance	Number of Shares	Weighted-Average Exercise Price	Weighted-Average Remaining Contractual Term (in years)	Aggregate Intrinsic Value (in thousands)
Balance at December 31, 2023	6,186,925	7,273,461	$ 7.50	7.26	$ 264
Authorized	3,903,416	—			
Granted	(8,947,004)	7,015,522	$ 1.74		
Exercised	—	(30,797)	$ 1.99		
Cancelled	2,403,755	(1,512,706)	$ 3.84		
Balance at June 30, 2024	3,547,092	12,745,480	$ 4.78	8.16	$ 14
Vested and exercisable at June 30, 2024		5,838,765	$ 7.55	6.76	$ 14
Vested and expected to vest at June 30, 2024		12,139,168	$ 4.90	8.10	$ 14

For the six months ended June 30, 2024, the total intrinsic value of stock option awards exercised was de minimis, determined at the date of option exercise, and the total cash received upon exercise of stock options was not significant for the period. The aggregate intrinsic value was calculated as the difference between the exercise prices of the underlying stock option awards and the estimated fair value of the common stock on the date of exercise.

As of June 30, 2024, $10.2 million of total unrecognized compensation cost related to non-vested employee and consultant options is expected to be recognized over a weighted-average period of 1.40 years. The total fair value of shares vested during the six months ended June 30, 2024 was $4.8 million.

Stock-based compensation expense and awards granted to non-employees were $0.4 million and $0.3 million, respectively, for the six months ended June 30, 2024 and 2023.

Restricted Stock Units

The Company has granted restricted stock unit awards under the 2018 Equity Plan. The restricted stock unit awards have a term of up to 10 years and generally vest over a 6 month, 1 or 2-year period. The following table summarizes the Company's restricted stock unit activity during the six months ended June 30, 2024:

	Number of Shares		Weighted-Average Grant Date Fair Value
Outstanding, unvested at December 31, 2023	3,088,970	$	3.29
Issued	814,462	$	2.15
Vested	(826,642)	$	3.28
Canceled/Forfeited	(461,245)	$	3.01
Outstanding, unvested at June 30, 2024	2,615,545	$	2.99

Performance-Based Restricted Stock Units

In March 2024, the Company granted 1,117,020 performance-based restricted stock unit awards ("PSUs") to certain executives under the 2018 Equity Plan. Vesting of the PSUs is dependent upon achievement of certain performance-based metrics through December 31, 2025. Assuming achievement of each performance-based metric, the executive must also generally remain in the Company's service at the date of achievement of the performance-based metric. PSUs are converted into shares of the Company's common stock once vested. The number of shares earned at the end of the performance period will vary, based on actual performance. Upon grant of the PSUs, the Company recognizes stock-based compensation expense related to these awards based on assumptions as to what percentage of each target will be achieved. The Company evaluates these target assumptions on a quarterly basis and adjusts stock-based compensation expense related to these awards, as appropriate.

As of June 30, 2024, 167,555 shares were vested, and therefore the Company recorded $0.1 million stock-based compensation expense related to the PSUs for the three and six months ended June 30, 2024.

The following table summarizes the performance-based restricted stock activity under the 2018 Equity Plan during the six months ended June 30, 2024:

	Number of Shares		Weighted-Average Grant Date Fair Value
Unvested performance-based restricted stock at December 31, 2023	—	$	—
Granted	1,117,020	$	0.75
Vested	(167,555)	$	0.75
Canceled/Forfeited	(111,698)	$	0.75
Unvested performance-based restricted stock at June 30, 2024	837,767	$	0.75

Stock-Based Compensation Expense

Total stock-based compensation for all awards granted to employees, directors and non-employees and purchase rights under the Company's 2018 and 2021 Equity Plans and the 2018 Employee Stock Purchase Plan (“ESPP”), before taxes, is as follows (in thousands):

	Three Months Ended June 30,				Six Months Ended June 30,			
	2024		2023		2024		2023	
Research and development expenses	$	1,609	$	1,631	$	3,269	$	3,244
General and administrative expenses		1,858		1,309		3,444		2,587
Total	$	3,467	$	2,940	$	6,713	$	5,831

12. Net Loss Per Common Share

Basic net loss per share is calculated by dividing the net loss by the weighted-average number of shares of common stock outstanding during the period, without consideration for common stock equivalents.

The following table sets forth the computation of the basic and diluted net loss per share (in thousands, except for share and per share amounts):

	Three Months Ended June 30,		Six Months Ended June 30,	
	2024	2023	2024	2023
Numerator:				
Net loss	$ (23,396)	$ (35,256)	$ (63,781)	$ (69,238)
Denominator:				
Weighted-average common shares outstanding, basic and diluted	143,296,662	114,929,523	130,843,943	114,676,261
Net loss per share, basic and diluted	$ (0.16)	$ (0.31)	$ (0.49)	$ (0.60)

In December 2020, the Company issued and sold Warrants to purchase 27,480,719 shares of common stock at a nominal exercise price of $0.01 per share, in October 2022, the Company issued and sold Warrants to purchase 13,274,923 shares of common stock at a nominal exercise price of $0.0001 per share, and in April 2024, the Company issued and sold Warrants to purchase 13,334,222 shares of common stock at a nominal exercise price of $0.0001 per share (see Note 10). The shares of common stock into which the 2020, 2022 and 2024 Warrants may be exercised are considered outstanding for the purposes of computing earnings per share, because the shares may be issued for little or no consideration, they are fully vested and the Warrants are immediately exercisable upon their issuance date.

During a period of net loss, basic net loss per share is the same as diluted net loss per share, as the inclusion of all potential common shares outstanding would have been anti-dilutive. Potentially dilutive securities that were not included in the diluted per share calculations because they would be anti-dilutive were as follows:

	June 30,	
	2024	2023
Options issued and outstanding and ESPP shares issuable and outstanding	12,908,539	7,596,222
Restricted stock subject to future vesting	2,615,545	3,457,041
Performance-based restricted stock subject to future vesting	837,767	—
Warrants to purchase common stock	21,667,555	—
Total	38,029,406	11,053,263

13. Severance and Other Costs

On February 29, 2024, the Company announced a reduction in its workforce by approximately 40 percent, which was intended to reduce costs and preserve capital. In connection with the workforce reduction, the Company recognized severance and other charges of $3.9 million for the three months ended March 31, 2024, consisting of costs associated with employee severance and asset impairments. The severance and other charges were recorded to the respective research and development and general and administrative operating expense categories on the condensed consolidated statement of operations and comprehensive loss. As of June 30, 2024, the Company had no unpaid severance liabilities under accrued compensation on the condensed consolidated balance sheet.

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

You should read the following discussion and analysis of our financial condition and results of operations together with the condensed consolidated financial statements and notes thereto included elsewhere in this Quarterly Report on Form 10-Q, and our audited financial statements and related notes thereto included as part of our Annual Report on Form 10-K for the year ended December 31, 2023. This discussion and analysis, and other parts of this report, contain forward-looking statements, including, but not limited to, statements regarding our clinical and regulatory development plans for our product candidates; our expectations regarding the data to be derived in our ongoing and planned clinical trials; the timing of commencement of our future nonclinical studies, clinical trials and research and development programs; our ability to discover, develop and advance product candidates into, and successfully complete, clinical trials; our plans and strategy regarding maintaining existing and entering into new collaborations and/or partnerships; the timing or likelihood of regulatory filings and approvals for our product candidates; and the sufficiency of our capital resources. These forward-looking statements are identified by their use of terms and phrases, such as "believe," "could," "aim," "expect," "intend," "may," "plan," "will," and other similar terms and phrases, including references to assumptions. Such forward-looking statements involve substantial risks and uncertainties that could cause the outcome of our programs, future results, performance or achievements to differ significantly from those expressed or implied by the forward-looking statements. Such risks and uncertainties include, among others, , risks and uncertainties that interim results obtained may differ from those at completion of the studies and clinical trials, the uncertainties inherent in the drug development process, including our programs' clinical development, the process of designing and conducting preclinical and clinical trials, the regulatory approval processes, the timing of regulatory filings, the challenges associated with manufacturing drug products, our ability to successfully establish, protect and defend our intellectual property and other matters that could affect the sufficiency of existing cash to fund our operations. Our actual results could differ materially from those discussed in these forward-looking statements. For a further description of the risks and uncertainties that could cause actual results to differ from those expressed in these forward-looking statements, as well as risks relating to our business in general, see the section titled "Risk Factors" included elsewhere in this Quarterly Report on Form 10-Q, our Annual Report on Form 10-K for the year ended December 31, 2023. These forward-looking statements speak only as of the date hereof. Except as required by law, we assume no obligation to update or revise these forward-looking statements for any reason.

Overview

We are a clinical-stage biotechnology company that aims to develop the world's most potent vaccines. Specifically, we discover, develop, manufacture and deliver vaccine-based immunotherapy candidates against cancer and infectious disease. Our goal is to unlock more potent and durable immunity by harnessing vaccine innovation. We aim to achieve that goal by leveraging our in-house capabilities and technologies to address the shortcomings of currently available vaccines and immunotherapies.

The immune system sits at the nexus of many diseases, and we believe that immune response modulation is core to several transformational product classes. Recent advances have pointed to T cells as being central to the success of cancer immunotherapy and critical in the elimination of virally infected cells. We believe that our scientific approach of focusing on generating antigen-specific T cells, particularly the challenging but critical cytotoxic CD8+ T cell subclass, has the potential to drive transformational therapeutic and prophylactic benefits.

In oncology, we develop personalized vaccines that aim to destroy tumors through CD8+ (killer) T cell recognition of tumor cells by virtue of their surface display of neoantigens, peptides that are presented on cancer cells when certain mutations occur in tumor DNA. In infectious disease, we develop both therapeutic and prophylactic vaccines targeting both T cells and B cells. We believe we are leading the field of development and application of self-amplifying mRNA (samRNA), a rapidly emerging platform technology. Our unique approach to immunogen design, whereby our vaccines deliver, as appropriate, whole proteins to drive neutralizing antibodies (nAbs) and/or protein fragments to drive T cell responses, has the potential to both neutralize incoming pathogens (through nAbs) and kill infected cells through CD8+ T cell recognition of foreign, pathogen-derived peptides displayed on the surface of infected cells.

Our clinical programs include GRANITE, an individualized neoantigen-based vaccine program; SLATE, an "off-the-shelf" neoantigen-based vaccine program; CORAL, a next-generation SARS-CoV-2 vaccine program; and HIV, an HIV vaccine program in collaboration with Gilead Sciences, Inc (Gilead).

Beyond GRANITE, SLATE, CORAL and the HIV collaboration with Gilead, we continue to apply our broad set of capabilities in oncology and infectious diseases through promising preclinical work and partnerships.

The table below summarizes key information about our active and recently completed clinical trials.

Program	Phase	Status	Indication(s)	Collaborator	Commercial Rights
GRANITE	2/3	Enrollment Completed (Ph2 portion); Treatment Ongoing	MSS-CRC* first line maintenance	—	Gritstone
GRANITE	1/2	Completed	Early stage & advanced solid tumors	—	Gritstone
SLATE	1/2	Completed	KRAS advanced solid tumors	—	Gritstone
SLATE	1	IND Cleared	Mutant KRAS solid tumors	NCI	Gritstone**
CORAL	1	Active, not recruiting	SARS-CoV-2 in South Africa	CEPI	Gritstone
CORAL	1	Completed	SARS-CoV-2 booster	—	Gritstone
CORAL	1	Completed	SARS-CoV-2 naïve & booster	NIAID, IDCRC	Gritstone
HIV	1	Ongoing	HIV treatment/cure	Gilead Sciences	Gilead***

* MSS-CRC = microsatellite stable colorectal cancer
** National Cancer Institute (NCI) is responsible for conducting a Phase 1 clinical
*** Gilead is responsible for conducting a Phase 1 clinical trial

Since we commenced operations in August 2015, we have invested a significant portion of our efforts and financial resources in research and development activities and establishing our manufacturing facility. Manufacturing is a vital component of our platform approach to immunotherapy, and we have invested significantly in our manufacturing facility, which opened in November 2017. Until December 2019, we used a hybrid approach to manufacture our individualized immunotherapy, wherein certain elements of our product candidates were manufactured on an outsourced basis at qualified third-party contract manufacturing organizations (CMOs) and other elements of our product candidates were manufactured internally. In March 2020, we internalized the majority of the outsourced elements of the manufacturing process for our programs.

As of June 30, 2024, we had cash, cash equivalents, and marketable securities of $55.7 million. On April 4, 2024, the Company completed an underwritten public offering transaction. We received gross proceeds from the offering in the amount of $32.5 million, before deducting underwriting discounts and commissions and estimated expenses. We expect our existing cash, cash equivalents and marketable securities and the cash proceeds from the April 2024 financing will enable us to fund our operating expenses and capital expenditure requirements into the fourth quarter of 2024. If we are unable to raise additional funds, secure a waiver or renegotiate the terms of our Loan Agreement, we expect to be in default of the minimum liquidity requirement thereunder in the fourth quarter of 2024. Upon such a default, our existing cash, cash equivalents and marketable securities will only be sufficient to fund our operations into the fourth quarter of 2024.

Substantial doubt exists as to our ability to continue as a going concern. Our ability to continue as a going concern is subject to material uncertainty and dependent on our ability to obtain additional financing. We expect to incur significant expenses and increasing operating losses for at least the next several years as we continue our clinical development of, and seek regulatory approval for, our product candidates. We expect that our operating losses will fluctuate significantly from quarter to quarter and year to year due to timing of clinical development programs. Without additional funds, we may be forced to delay, scale back or eliminate some of our research and development activities or other operations and potentially delay product development in an effort to provide sufficient funds to continue our operations. If any of these events occurs, our ability to achieve our development and commercialization goals would be adversely affected.

The accompanying condensed consolidated financial statements and related notes have been prepared assuming that we will continue as a going concern, which contemplates the realization of assets and the settlement of liabilities and commitments in the normal course of business. The condensed consolidated financial statements and related notes do not reflect any adjustments relating to the recoverability and classification of assets or amounts and classification of liabilities that might be necessary if we are unable to continue as a going concern.

We are subject to continuing risks and uncertainties in connection with the current macroeconomic and geopolitical environments, including risks related to supply chain disruptions, inflation, market volatility, interest rate fluctuations, recent instability in the banking sector, uncertainty with respect to the federal debt ceiling and budget and the related potential for government shutdowns, labor shortages, cybersecurity events and ongoing regional conflicts around the world. We are closely monitoring the impact of these factors on all aspects of our operational and financial performance. To date, we have not experienced much of an impact on our business. However, our future results of operations and liquidity could be adversely impacted by a variety of factors, including those discussed in the section titled “Risk Factors” included elsewhere in this Quarterly Report on Form 10-Q and our Annual Report on Form 10-K for the year ended December 31, 2023. As of the date of issuance of this Quarterly Report on Form 10-Q,

the extent to which the current macroeconomic and geopolitical environments may materially impact our financial condition, liquidity, or results of operations remains uncertain.

Oncology Program Updates

We are developing a portfolio of vaccine-based cancer immunotherapy product candidates using a heterologous prime (ChAd)/boost (samRNA) approach aimed at targeting tumor-specific neoantigens ("TSNA") in solid tumors. Our two clinical-stage programs (GRANITE, which is “individualized” and SLATE, which is “off-the-shelf”) aim to induce a substantial neoantigen-specific CD8+ T cell response using neoantigen-directed immunotherapies. GRANITE patients receive a product candidate made specifically for them, based upon their tumor DNA/RNA sequence. In contrast, SLATE patients receive an off-the-shelf product candidate made for a subset of patients based on common driver mutations.

GRANITE – Individualized Vaccine Program for Solid Tumors

Our first oncology program, GRANITE, consists of individualized neoantigen-based immunotherapy candidates for solid tumors. GRANITE was granted Fast Track designation by the FDA for the treatment of microsatellite stable colorectal cancer (MSS-CRC) in 2018.

In late 2021, we initiated a randomized, controlled Phase 2/3 clinical trial in newly diagnosed metastatic MSS-CRC patients that has registrational intent (NCT05141721). The Phase 2 clinical trial is evaluating GRANITE as a maintenance treatment in patients with frontline MSS-CRC who have completed FOLFOX (or FOLFOXIRI)-bevacizumab induction therapy. The first patient was enrolled in January 2022, and the last patient in Phase 2 was randomized in August 2023.

On April 1, 2024, we announced preliminary progression free survival (PFS), circulating ctDNA and safety and tolerability data from the ongoing randomized Phase 2 clinical trial. Of the 104 patients randomized, 67 (39 GRANITE arm, 28 control arm) were included in the preliminary dataset. The remaining thirty-seven patients either left the trial prior to randomized treatment primarily due to early progressive disease or withdrawal of consent (36) or have yet to commence trial treatment (1).

We expect to report mature PFS data and additional long-term ctDNA data from the ongoing Phase 2 trial in the third quarter of 2024 and overall survival data in mid-2025.

SLATE – "Off the shelf" Vaccine Program for Solid Tumors

Our second oncology program, SLATE, consists of “off-the-shelf”, TSNA-directed immunotherapy product candidates. SLATE contains a fixed cassette with TSNA that are shared across a subset of cancer patients rather than a cassette unique to an individual patient, which distinguishes it as a potential off-the-shelf alternative candidate to GRANITE. The key differentiator and advantage of SLATE as compared to GRANITE is speed. SLATE vaccines are produced and delivered to clinical sites proactively and can be administered rapidly upon patient selection (achieved by standard commercial screening for driver mutations). We believe vaccines capable of targeting neoantigens from common tumor driver mutations, such as SLATE, have a clear potential clinical utility and commercialization advantages to existing treatment options.

In March 2024, *Nature Medicine* published interim results from our Phase 1 clinical trial of SLATE in which we discovered a novel immunodominance hierarchy of tumor neoantigens. This hierarchy was then leveraged to develop SLATE-KRAS, a KRAS-directed candidate that demonstrated superior immunogenicity to the initial version of SLATE in a subsequent Phase 2 trial and is currently being evaluated in a novel cell therapy-vaccine combination trial run by Steven A. Rosenberg of the National Cancer Institute (NCT06253520).

Having optimized and validated the SLATE cassette, we now believe the SLATE platform is ready for “plug and play” application across solid tumor indications and shared tumor neoantigen classes. In advancing SLATE, we aim to combine the potential benefits of the full spectrum of tumor antigens with the practicality of the “off-the-shelf” approach.

Infectious Disease Programs

In early 2021, we initiated two programs in infectious diseases: CORAL, a next-generation prophylactic program against COVID-19, and a collaboration with Gilead to develop a therapeutic vaccine against HIV.

Our infectious disease programs aim to deliver vaccine candidates that induce both B cell and T cell immunity with the potential to drive potent and durable immune response that can be applied for either protective or therapeutic benefit. This approach has demonstrated the ability to generate robust CD8+ T cells and neutralizing antibodies against SARS-CoV-2 in multiple preclinical and clinical studies and is being evaluated against multiple other pathogens in

Gritstone-owned and partnered studies. We believe that initially evaluating our approach against SARS-CoV-2 can provide proof of concept for a number of infectious diseases.

CORAL – Next-Generation COVID-19 Vaccine Program

To date, the CORAL program has comprised three Phase 1 clinical trials evaluating multiple samRNA candidates across various patient populations and settings: CORAL-BOOST (healthy volunteers following primary series of currently approved COVID-19 vaccines); CORAL-CEPI (vaccine-naïve healthy and HIV+ subjects in South Africa); and CORAL-NIH (run by the NIAID in previously vaccinated healthy volunteers). Results to date have demonstrated induction and persistence of high neutralizing antibody levels through at least 12 months as well as broad T cell responses. The CORAL program has been supported by Biomedical Advanced Research and Development Authority (BARDA), NIAID, the Coalition for Epidemic Preparedness Innovations (CEPI) and the Bill & Melinda Gates Foundation.

BARDA Contract

In September 2023, we entered into the BARDA Contract with BARDA. The contract was awarded as part of Project NextGen, an initiative by the U.S. Department of Health and Human Services to advance a pipeline of new, innovative vaccines and therapeutics providing broader and more durable protection for COVID-19.

Under the BARDA contract, which is valued at up to $433.0 million, we may conduct a 10,000 participant, randomized Phase 2b comparative study to compare the efficacy, safety, and immunogenicity of the Gritstone next-generation COVID-19 vaccine candidate (our samRNA vaccine containing Spike plus other viral targets) with an approved COVID-19 vaccine. The vaccines evaluated in the study are to be tailored to the Omicron XBB.1.5 Spike sequence. Preparations for the study are underway.

The BARDA Contract, as amended, consists of a base period (currently ending on or before March 31, 2025) and a total contract period-of-performance (base period plus two stages gated at BARDA's discretion) of up to approximately four years. The base period for the BARDA Contract includes government funding of up to $10.0 million for performance of certain milestones such as preparation of protocol synopsis and submission of an investigational new drug application. Following successful completion of the base period, the BARDA Contract provides for up to approximately $423.0 million of additional BARDA funding for the final two stages gated at BARDA's discretion in support of the clinical trial execution and additional analyses for the clinical trial. In late 2023, BARDA informed us that any potential funding beyond the base period of the BARDA Contract is expected to be administered under a new award made by the Rapid Response Partnership Vehicle ("RRPV Consortium"). In early 2024, we applied to the RRPV Consortium for funding of our Phase 2b CORAL Study extending beyond the base period of the BARDA Contract. There is no certainty that the RRPV Consortium, which selects awardees at BARDA's discretion, will accept our application and on what terms. As of June 30, 2024, BARDA and Gritstone have amended the base period under the BARDA Contract to extent to March 31, 2025. Also, as of June 30, 2024, BARDA had not made the decision to proceed with either of the two stages, nor have we been awarded a new award by or entered into a new agreement with the RRPV Consortium, the terms and financials of any such new agreement may be different from the terms and financials of the BARDA Contract. The BARDA Contract contains terms and conditions that are customary for contracts with BARDA of this nature, including provisions giving the government the right to terminate the contract at any time for its convenience, and similar terms and conditions are expected under a potential agreement with the RRPV Consortium.

HIV Vaccine Collaboration with Gilead Sciences

In January 2021, we entered into a collaboration, option and license agreement with Gilead to research and develop a vaccine-based immunotherapy for HIV. Together, we plan to develop an HIV-specific therapeutic vaccine using our proprietary prime-boost vaccine platform, comprised of samRNA and adenoviral vectors, with antigens developed by Gilead. The collaboration and the program are progressing, and a Phase I trial is ongoing. If Gilead decides to progress development beyond the Phase 1 study by exercising their exclusive option, the Company will receive a $40.0 million non-refundable option exercise fee.

In February 2023, the first data from a preclinical study conducted in collaboration with Gilead were presented at the Conference on Retroviruses and Opportunistic Infections (CROI) 2023. The results showed that simian immunodeficiency virus (SIV), ChAd and samRNA vaccines induced a strong and broad CD8+ T cell immune response, which was significantly enhanced in combination with immune modulators.

Components of Our Operating Results

Collaboration, License and Grant Revenue

To date, we have not generated any revenue from product sales, and we do not expect to generate any revenue from product sales for the foreseeable future. For the three and six months ended June 30, 2024, we recognized $0.9 million and $2.7 million, respectively, of revenue from the Gilead Collaboration Agreement, the CEPI Funding Agreement, the BARDA Contract and the Gates Grant Agreement. For the three and six months ended June 30, 2023, we recognized $2.0 million and $4.4 million, respectively, of revenue from the 2seventy Agreement, the Gilead Collaboration Agreement and the grant agreements with CEPI and the Gates Foundation. See Note 9 to our condensed consolidated financial statements for additional information.

In the future, we expect to continue to recognize revenue from the Gilead Collaboration Agreement and the CEPI Funding Agreement and may generate revenue from product sales or other collaboration agreements, strategic alliances and licensing arrangements. We expect our revenue to fluctuate on a quarterly and annual basis due to the timing and amount of license fees, reimbursement of costs incurred, milestone and other payments, as well as product sales, to the extent that any are successfully commercialized. If we fail to complete the development of our product candidates in a timely manner or obtain regulatory approval for them, our ability to generate future revenue, and our results of operations and financial position, would be materially adversely affected.

Operating Expenses

Research and Development Expenses

Since our inception, we have committed significant resources to our research and development activities, including conducting preclinical studies, manufacturing development efforts and related development activities for our product candidates.

Research and development activities account for a significant portion of our operating expenses. Research and development costs are expensed as incurred. These costs include:

- External research and development expenses, including:
  - expenses incurred under arrangements with third parties, including CROs, preclinical testing organizations, CMOs, academic and non-profit institutions and consultants;
  - fees related to our license agreements;
- Internal research and development expenses, including (i) headcount-related expenses, such as salaries, payroll taxes, benefits, non-cash stock-based compensation and travel, for employees contributing to research and (ii) development activities, including the costs associated with the development of our EDGE™ platform; and
- Other expenses, which include direct and allocated expenses for laboratories, facilities and other costs.

Pursuant to the Arbutus License Agreement, Arbutus granted us a worldwide, exclusive license to certain technology of Arbutus, including Arbutus' portfolio of proprietary and clinically-validated LNP products and associated intellectual property, as well as technology transfer of Arbutus' manufacturing know-how. During the three and six months ended June 30, 2024 and 2023, we had no research and development expense under the Arbutus Agreement.

Pursuant to the 2020 Genevant License Agreement, as amended, Genevant granted us exclusive license rights under certain intellectual property related to Genevant's LNP technology for a single indication, and we agreed to pay Genevant an initial payment of $2.0 million, and up to an aggregate of $71.0 million in specified development, regulatory, and commercial milestones, and low to mid-single digit royalties on net sales of licensed products. The upfront payment of $2.0 million was included in research and development expenses during 2020. In March 2022, a milestone in the amount of $1.0 million was met, which was included in research and development expense for the year ended December 31, 2022. No research and development expense was recorded under the 2020 Genevant License Agreement for the three and six months ended June 30, 2024 and 2023.

Pursuant to the 2021 Genevant License Agreement, we obtained a nonexclusive license to Genevant's LNP technology to develop and commercialize samRNA vaccines against SARS-CoV-2, the virus that causes COVID-19. Under the 2021 Genevant License Agreement, we made a $1.5 million upfront payment to Genevant, and Genevant is eligible to receive from us up to $191.0 million in contingent milestone payments per product, plus certain royalties on future product sales or licensing (or, in certain scenarios and subject to certain conditions, in lieu of these milestones

and royalties Genevant would receive a percentage of amounts we receive from sublicenses). In March 2021, a milestone was met following the initial patient treatment in the Phase 1 clinical trial conducted through the NIAID-supported IDCRC. Both the $1.5 million upfront and $1.0 million milestone payments were recorded as research and development expense for the year ended December 31, 2021. No research and development expense was recorded under the 2021 Genevant License Agreement for the three and six months ended June 30, 2024 and 2023.

Pursuant to the 2023 Genevant License Agreement, we obtained a multi-year option for a non-exclusive license under Genevant's LNP technology on a pathogen-by-pathogen basis to develop and commercialize samRNA vaccines against infectious disease. Under the 2023 Genevant License Agreement, we made a $2.5 million upfront payment to Genevant and Genevant is eligible to receive from us option maintenance and exercise fees in the single digit millions and up to an aggregate of $136.0 million in contingent milestone payments per product, subject to increase for multi-pathogen products and in other specified circumstances, and royalties ranging from the mid to high single digits on future product sales. If we outlicense an applicable infectious disease program, in lieu of certain of these payments, Genevant may be entitled to a percentage of amounts that we receive from our sublicensee. The $2.5 million upfront payment was included in research and development expense for the year ended December 31, 2023.

We expect our research and development expenses to increase substantially in the future as we continue to advance our product candidates into and through clinical studies and pursue regulatory approval. Conducting the necessary clinical studies to obtain regulatory approval is costly and time-consuming, and such clinical studies generally become larger and more costly to conduct as they advance into later stages. The successful development of our product candidates is highly uncertain. The actual probability of success for our product candidates may be affected by a variety of risks and uncertainties associated with drug development, including those set forth in the sections entitled "Risk Factors" included in Part II, Section 1A of this Quarterly Report on Form 10-Q and in Part I, Item 1A of our Annual Report on Form 10-K for the year ended December 31, 2023.

The following table summarizes our research and development expenses by program and category (in thousands):

	Three Months Ended June 30,		Six Months Ended June 30,	
	2024	2023	2024	2023
GRANITE program external expenses	$ 1,914	$ 5,108	$ 4,861	$ 10,517
SLATE program external expenses	70	727	242	1,343
CORAL program external expenses	1,894	1,347	5,919	3,480
Other program external research and development expenses	3,393	6,267	8,008	12,019
Personnel-related expenses [(1)]	8,305	11,161	19,807	23,012
Severance and other costs	—	—	3,678	—
Other unallocated research and development expenses	5,235	6,357	11,337	11,110
Total research and development expenses	$ 20,811	$ 30,967	$ 53,852	$ 61,481

(1) Personnel-related expenses include stock-based compensation expense of $1.6 million and $3.3 million, respectively, for the three and six months ended June 30, 2024, and $1.6 million and $3.2 million, respectively, for the three and six months ended June 30, 2023.

We do not track internal related expenses on a program-by-program basis, because our research and development employees and infrastructure resources are utilized across our development programs.

General and Administrative Expenses

Our general and administrative expenses consist primarily of salaries and related costs, including, but not limited to, payroll taxes, benefits, non-cash stock-based compensation and travel. Other general and administrative expenses include legal costs of pursuing patent protection of our intellectual property and professional service fees for auditing, tax and general legal services. We expect our general and administrative expenses to continue to increase in the future as we expand our operating activities and prepare for potential commercialization of our current and future product candidates, increase our headcount and support our operations as a public company, including increased expenses related to legal, accounting, regulatory and tax-related services associated with maintaining compliance with requirements of the Nasdaq Global Select Market and the SEC, directors and officers liability insurance premiums and investor relations activities. Allocated expenses consist of rent expenses related to our office and research and development facilities, depreciation and other allocated costs not otherwise included in research and development expenses.

Interest Income

Interest income consists primarily of interest income and investment income earned on our cash, cash equivalents and marketable securities.

Interest Expense

Interest expense consists primarily of interest expense related to our Loan Agreement. A portion of the interest expense is non-cash expense relating to the accretion of the final payment fees and amortization of debt discount and debt issuance costs associated with the Loan Agreement.

Other Income (Expense)

Other income (expense) consists primarily of revaluation of the common warrants issued in connection with the April 2024 underwritten public offering (see Note 10) that are classified as liabilities and are recorded at fair value. The common warrants are re-measured at each balance sheet date.

Results of Operations

Comparison of the Three and Six Months Ended June 30, 2024 and 2023

The following table sets forth the significant components of our results of operations (in thousands):

	Three Months Ended June 30,		
	2024	2023	Change
Revenues:			
Collaboration and license revenues	$ 57	$ 400	$ (343)
Grant revenues	864	1,555	(691)
Total revenues	921	1,955	(1,034)
Operating expenses:			
Research and development	20,811	30,967	(10,156)
General and administrative	7,698	6,716	982
Total operating expenses	28,509	37,683	(9,174)
Loss from operations	(27,588)	(35,728)	8,140
Interest income	691	1,479	(788)
Interest expense	(1,304)	(985)	(319)
Other income (expense)	4,805	(22)	4,827
Net loss	$ (23,396)	$ (35,256)	$ 11,860

	Six Months Ended June 30,		
	2024	2023	Change
Revenue:			
Collaboration and license revenues	$ 106	$ 941	$ (835)
Grant revenues	2,557	3,456	(899)
Total revenue	2,663	4,397	(1,734)
Operating expenses:			
Research and development	53,852	61,481	(7,629)
General and administrative	16,200	13,461	2,739
Total operating expenses	70,052	74,942	(4,890)
Loss from operations	(67,389)	(70,545)	3,156
Interest income	1,403	3,157	(1,754)
Interest expense	(2,600)	(1,828)	(772)
Other income (expense)	4,805	(22)	4,827
Net loss	$ (63,781)	$ (69,238)	$ 5,457

Collaboration and License, Contract and Grant Revenues

Collaboration and license revenues from our collaboration arrangements and grant revenues were $0.9 million and $2.7 million for the three and six months ended June 30, 2024, respectively. During the three months ended June 30, 2024, we recorded $0.9 million in grant revenue from the CEPI Funding Agreement and a de minimis amount in collaboration revenue related to the Gilead Collaboration Agreement. During the six months ended June 30, 2024, we recorded $1.9 million in grant revenue from the CEPI Funding Agreement, $0.4 million in grant revenue from BARDA Contract, $0.4 million in grant revenue from the Gates Foundation, and a de minimis amount in collaboration revenue related to the Gilead Collaboration Agreement.

Collaboration and license revenues from our collaboration arrangements and grant revenues were $2.0 million and $4.4 million for the three and six months ended June 30, 2023, respectively. During the three months ended June 30, 2023, we recorded $0.1 million in collaboration revenue related to the Gilead Collaboration Agreement, $0.3 million in collaboration revenue related to the 2seventy Agreement, $1.1 million in grant revenue from the CEPI Funding Agreement, and $0.5 million in grant revenue from the Gates Foundation. During the six months ended June 30, 2023, we recognized $0.7 million in collaboration revenue related to the 2seventy Agreement, $0.2 million in collaboration revenue related to the Gilead Collaboration Agreement, $2.6 million in grant revenue from the CEPI Funding Agreement, and $0.9 million in grant revenue from the Gates Foundation.

See Note 9 to our condensed consolidated financial statements for additional information.

Research and Development Expenses

Research and development expenses were $20.8 million and $53.9 million for the three and six months ended June 30, 2024, respectively, and $31.0 million and $61.5 million for the three and six months ended June 30, 2023, respectively.

The decrease of $10.2 million for the three months ended June 30, 2024 compared to the three months ended June 30, 2023 was primarily due to decreases of $3.2 million in personnel-related expenses, $3.2 million in laboratory supplies, $2.6 million in outside services, consisting primarily of clinical trial and other chemistry, manufacturing and controls (CMC) related expenses and $1.2 million in facilities related costs.

The decrease of $7.6 million for the six months ended June 30, 2024 compared to the six months ended June 30, 2023 was primarily due to decreases of $5.0 million in laboratory supplies, $3.6 million in personnel-related expenses, $2.9 million in outside services, consisting primarily of clinical trial and other CMC related expenses, partially offset by increases of $0.2 million in facilities related costs and a one-time severance and other charge of $3.7 million.

General and Administrative Expenses

General and administrative expenses were $7.7 million for the three months ended June 30, 2024 compared to $6.7 million for the three months ended June 30, 2023. The increase of $1.0 million was primarily attributable to increases of $0.9 million in personnel-related expenses, including a $0.5 million increase of non-cash stock-based compensation, and $0.1 million in facilities related costs.

General and administrative expenses were $16.2 million for the six months ended June 30, 2024 compared to $13.5 million for the six months ended June 30, 2023. The increase of $2.7 million was primarily attributable to increases of $1.6 million in personnel-related expenses, of which $0.8 million related to non-cash stock-based compensation expense, $0.6 million in facilities related costs, $0.3 million in outside services and $0.2 million attributable to a one-time severance charge.

Interest Income

Interest income was $0.7 million and $1.4 million, respectively, for the three and six months ended June 30, 2024, and $1.5 million and $3.2 million, respectively, for the three and six months ended June 30, 2023. The income for both periods represents interest and investment income from cash, cash equivalents and marketable securities. The decrease is primarily due to lower cash, cash equivalent and investment balances in 2024 than in 2023.

Interest Expense

Interest expense was $1.3 million and $2.6 million, respectively, for the three and six months ended June 30, 2024, and $1.0 million and $1.8 million, respectively, for the three and six months ended June 30, 2023. Interest expense is primarily comprised of the contractual coupon interest expense, the amortization of the debt discount and

issuance costs and the accretion of the final payment fee associated with the Loan Agreement. The increase in interest expense is due to a higher principal balance of $40.0 million outstanding under the Loan Agreement as of June 30, 2024 as compared to $30.0 million outstanding thereunder as of June 30, 2023.

Other Income (Expense)

Other income (expense) was $4.8 million for the three and six months ended June 30, 2024 and de minimus for the three and six months ended June 30, 2023. The increase of $4.8 million was primarily due to the revaluation of the Common Warrants between their issuance on April 4, 2024 and June 30, 2024.

Liquidity and Capital Resources

Sources of Liquidity

Since our inception, we have funded our operations primarily through private placements of our convertible preferred stock, common stocks and warrants, public offerings of our common stock, common warrants and pre-funded warrants, the sale of common stock under an “at the market offering”, proceeds from the Loan Agreement, proceeds received from our collaboration arrangements, and non-dilutive grants from various nonprofit and governmental organizations. As of June 30, 2024, we had cash, cash equivalents, and marketable securities of $55.7 million and an accumulated deficit of $723.3 million, compared to cash, cash equivalents, and marketable securities of $79.3 million and an accumulated deficit of $659.6 million as of December 31, 2023. We expect that our cash, cash equivalents, and marketable securities as of June 30, 2024 will not enable us to fund our current and planned operating expenses and capital expenditures for at least the next 12 months from the date of the filing of this Quarterly Report on Form 10-Q. These conditions raise substantial doubt about our ability to continue as a going concern for a period of one year from the date of the issuance of this Quarterly Report on Form 10-Q. As a result, the Company believes that its existing cash, cash equivalents and investments, before considering any potential default under its Loan Agreement, will only be sufficient to fund its planned operating and capital needs into the fourth quarter of 2024. However, our forecast of the period of time through which our financial resources will be adequate to support our operations is a forward-looking statement that involves risks and uncertainties, and actual results could vary materially based on a number of factors including the adverse impact any event of default under our Loan Agreement. In particular, if we are unable to raise additional funds, secure a waiver or renegotiate the terms of our Loan Agreement, we expect to be in default under the minimum liquidity requirement included in the Loan Agreement in the fourth quarter of 2024. Upon such a default, our existing cash, cash equivalents and investments will only be sufficient to fund our operations into the fourth quarter of 2024. The accompanying condensed consolidated financial statements and related notes have been prepared assuming that we will continue as a going concern, which contemplates the realization of assets and the settlement of liabilities and commitments in the normal course of business. The condensed consolidated financial statements and related notes do not reflect any adjustments relating to the recoverability and classification of assets or amounts and classification of liabilities that might be necessary if we are unable to continue as a going concern.

Additionally, we do not expect positive cash flows from operations in the foreseeable future. Historically, we have incurred operating losses as a result of ongoing efforts to develop our vaccine candidates, including conducting ongoing research and development and providing general and administrative support for these operations. We expect to continue to incur net operating losses for at least the next several years as we advance GRANITE, SLATE, and CORAL and any future product candidates through clinical development, seek regulatory approval, prepare for and, if approved, proceed to commercialization, continue our research and development efforts and invest in our manufacturing facility.

In March 2022, we (i) filed a shelf registration statement on Form S-3 (the 2022 Shelf Registration Statement) with the SEC, covering the offering of up to $250.0 million of our common stock, preferred stock, debt securities, warrants and units and (ii) entered into a Sales Agreement with Cowen and Company, LLC (Cowen) for an "at-the-market" offering of up to $100.0 million in shares of our common stock (2022 ATM Offering Program). Through June 30, 2024, we have received aggregate proceeds from our 2022 ATM Offering Program of $33.1 million, net of commissions and offering costs, pursuant to the issuance of 17,182,864 shares. As of June 30, 2024, we have $65.8 million available under the 2022 ATM Offering Program.

In July 2022, we entered into a loan and security agreement (the Loan Agreement) with Hercules Capital, Inc. (Hercules) and Silicon Valley Bank (SVB) which provides us with a 60-month term loan facility for up to $80.0 million in borrowing capacity across five potential tranches. At the closing of the Loan Agreement, we drew $20.0 million from the first tranche, and we drew an additional $10.0 million in March 2023. The remaining tranches provide up to $50.0 million borrowing capacity and become available if and when we meet certain milestones set forth in the

Loan Agreement. In the fourth quarter of 2022, one milestone under the Loan Agreement had been achieved, pursuant to which we drew an additional $10 million on December 15, 2023. As of June 30, 2024, no other milestones had been achieved. The Loan Agreement is secured by substantially all of our assets, other than intellectual property. There are no warrants associated with the Loan Agreement. See Note 8 to our condensed consolidated financial statements for additional information.

In March 2023, we, Hercules and SVB entered into an amendment to the Loan Agreement (the First Amendment) to amend the minimum liquidity requirements thereunder. Under the amended Loan Agreement (as amended, the Amended Loan Agreement), beginning on the earliest occurrence of certain milestones or April 1, 2024, and at all times thereafter, so long as our market capitalization is no greater than $400.0 million, we are subject to a minimum liquidity requirement equal to the then outstanding balance under the Amended Loan Agreement multiplied by 0.55 or 0.45, which multiplier depends on whether we achieve certain performance milestones. As of June 30, 2024, we have not achieved the performance milestones to be subject to the lower 0.45 multiplier.

In April 2023, we received $0.7 million under the Gates Grant Agreement.

In June 2023, we received the third tranche payment of $1.2 million under the CEPI Funding Agreement.

In December 2023, we received total payments of $9.0 million under the BARDA Contract and the fourth tranche payment of $2.4 million under the CEPI Funding Agreement.

In January 2024, we received $0.2 million under the Gates Grant Agreement.

In March 2024, we received $0.4 million under the BARDA Contract.

In April 2024, we completed an underwritten public offering, in which we issued and sold 8,333,333 shares of common stock and accompanying common warrants to purchase up to 8,333,333 shares of common stock at a per share exercise price of $1.65, at a combined purchase price of $1.50 per share and accompanying common warrant, and to a certain investor in lieu of common stock, pre-funded warrants to purchase up to 13,334,222 shares of common stock at a per share exercise price of $0.0001 and accompanying common warrants to purchase up to 13,334,222 shares of common stock at a combined purchase price of $1.4999 per pre-funded warrant and accompanying warrant. We received gross proceeds from the offering in the amount of $32.5 million, before deducting underwriting discounts and commissions and estimated expenses.

In April 2024, we received the fifth tranche payment of $0.3 million under the CEPI Agreement.

Future Funding Requirements

We do not expect positive cash flows from operations in the foreseeable future, if ever. Historically, we have incurred operating losses as a result of ongoing efforts to develop our cancer and infectious disease immunotherapy candidates, including conducting ongoing research and development, clinical and preclinical studies and providing general and administrative support for these operations. We do not have any products approved for sale, and we do not expect to generate any meaningful revenue unless and until we obtain regulatory approval of and commercialize any of our current and future product candidates and/or enter into additional significant collaboration or grant agreements with third parties, and we do not know when, or if, either will occur. We expect to continue to incur net operating losses for at least the next several years and we expect the losses to increase as we advance our CORAL, GRANITE, and SLATE programs, as well as any future product candidates, through clinical development, seek regulatory approval, prepare for and, if approved, proceed to commercialization, continue our research and development efforts and invest in our manufacturing facility. We are subject to all the risks typically related to the development of new product candidates, and we may encounter unforeseen expenses, difficulties, complications, delays and other unknown factors that may adversely affect our business. We do not yet have a sales organization or commercial infrastructure and, accordingly, we will need to incur significant expenses to develop a sales organization and commercial infrastructure in advance of generating any commercial product sales. Moreover, we incur substantial costs associated with operating as a public company. We anticipate that we will need substantial additional funding in connection with our continuing operations.

Until we can generate a sufficient amount of revenue from the commercialization of immunotherapy product candidates or from additional significant collaboration or license agreements with third parties, if ever, we expect to finance our future cash needs through private and public equity offerings, including our “at-the-market” offering programs, debt financings, and potential future collaboration, license and development agreements. Adequate funding may not be available to us on acceptable terms, or at all. If sufficient funds on acceptable terms are not available when needed, including, but not limited to, as a result of macroeconomic factors related to ongoing regional conflicts around the world, inflation and market volatility, interest rate fluctuations, recent instability in the global banking sector, uncertainty with respect to the federal debt ceiling and budget and the related potential for government shutdowns, we

will be required to significantly reduce our operating expenses and delay, reduce the scope of, or eliminate one or more of our development programs. If we are unable to raise additional capital in sufficient amounts or on terms acceptable to us, we will be required to significantly reduce our operating expenses and may have to significantly delay, scale back or discontinue the development or commercialization of one or more of our current or future product candidates. If we raise additional funds by issuing equity or convertible debt securities, it could result in dilution to our existing stockholders and increased fixed payment obligations. In addition, as a condition to providing additional funds to us, future investors may demand, and may be granted, rights superior to those of existing stockholders. If we incur indebtedness, we could become subject to covenants that would restrict our operations and potentially impair our competitiveness, such as limitations on our ability to incur additional debt, limitations on our ability to acquire, sell or license intellectual property rights and other operating restrictions that could adversely impact our ability to conduct our business. Additionally, any future collaborations we enter into with third parties may provide capital in the near term, but we may have to relinquish valuable rights to our product candidates or grant licenses on terms that are not favorable to us. Any of the foregoing could significantly harm our business, financial condition and prospects.

Since our inception, we have incurred significant losses and negative cash flows from operations. We have an accumulated deficit of $723.3 million as of June 30, 2024. We expect to incur substantial additional losses in the future as we conduct and expand our research and development activities. We believe that our existing cash, cash equivalents and marketable securities will not be sufficient to enable us to fund our projected operations through at least the next twelve (12) months from the date of this Quarterly Report on Form 10-Q. These conditions raise substantial doubt about our ability to continue as a going concern for a period of one year from the date of the issuance of this Quarterly Report on Form 10-Q. As a result, the Company believes that its existing cash, cash equivalents and investments will only be sufficient to fund its planned operating and capital needs into the fourth quarter of 2024. However, our forecast of the period of time through which our financial resources will be adequate to support our operations is a forward-looking statement that involves risks and uncertainties, and actual results could vary materially based on a number of factors including the adverse impact a default of any of our debt covenants from our Loan Agreement. In particular, if we are unable to raise additional funds, secure a waiver or renegotiate the terms of our Loan Agreement, we expect to be in default under the minimum liquidity requirement included in the Loan Agreement in the fourth quarter of 2024. Upon such a default, our existing cash, cash equivalents and investments will only be sufficient to fund our operations into the fourth quarter of 2024. The accompanying condensed consolidated financial statements and related notes have been prepared assuming that we will continue as a going concern, which contemplates the realization of assets and the settlement of liabilities and commitments in the normal course of business. The condensed consolidated financial statements and related notes do not reflect any adjustments relating to the recoverability and classification of assets or amounts and classification of liabilities that might be necessary if we are unable to continue as a going concern.

We have based our projections of operating capital requirements on assumptions that may prove to be incorrect and we may use all our available capital resources sooner than we expect. Because of the numerous risks and uncertainties associated with research, development and commercialization of product candidates, we are unable to estimate the exact amount of our operating capital requirements. Our future capital requirements depend on many factors, including:

- the scope, progress, results and costs of developing our product candidates, and of conducting preclinical studies and clinical trials, including our clinical trials for GRANITE, SLATE and CORAL;
- the timing of, and the costs involved in, obtaining regulatory approvals for our oncology and infectious disease immunotherapy product candidates; in particular, any costs incurred in connection with any future regulatory requirements that may be imposed by the FDA or foreign regulatory bodies;
- the number and characteristics of any additional product candidates we develop or acquire;
- the timing and amount of any milestone, royalty or other payments we are required to make pursuant to any current or future collaboration or license agreements;
- the cost of manufacturing our product candidates we successfully commercialize, including the cost of scaling up our internal manufacturing operations;
- the cost of building a sales force in anticipation of product commercialization;
- the cost of commercialization activities, including building a commercial infrastructure, marketing, sales and distribution costs;

- our ability to maintain existing, and establish new, strategic collaborations, licensing or other arrangements and the financial terms of any such agreements, including the timing and amount of any future milestone, royalty or other payments due under any such agreement;
- any product liability or other lawsuits related to our products;
- the costs to attract, hire and retain skilled personnel;
- the costs associated with being a public company;
- the costs involved in preparing, filing, prosecuting, maintaining, defending and enforcing our intellectual property portfolio; and
- the timing, receipt and amount of sales of any future approved products, if any.

A change in the outcome of any of these or other variables with respect to the development of any of our current and future product candidates could significantly change the costs and timing associated with the development of that product candidate. Furthermore, our operating plans may change in the future, and we will need additional funds to meet operational needs and capital requirements associated with such operating plans.

Cash Flows

The following table sets forth a summary of the primary sources and uses of cash for each of the periods presented below (in thousands):

	Six Months Ended June 30,	
	2024	2023
Cash used in operating activities	$ (60,378)	$ (71,053)
Cash provided by investing activities	11,418	45,765
Cash provided by financing activities	35,254	9,664
Net decrease in cash and cash equivalents	$ (13,706)	$ (15,624)

Cash Used in Operating Activities

During the six months ended June 30, 2024, cash used in operating activities was $60.4 million, which consisted of net loss of $63.8 million, adjusted by non-cash charges of $14.0 million and net changes in our operating assets and liabilities of $10.6 million. The non-cash charges consisted primarily of depreciation and amortization expense of $3.3 million, amortization of debt discount and issuance costs of $0.8 million, stock-based compensation of $6.7 million, impairment of property and equipment of $1.5 million related to the reduction in force and non-cash operating lease expense of $6.6 million, partially offset by $4.8 million of non-cash gains on the change in fair value of warrant liability and $0.1 million of net amortization of premiums and discounts on marketable securities. The change in our operating assets and liabilities was primarily due to decreases of $4.0 million in accrued compensation, $6.3 million in lease liability, $1.7 million in deferred revenue, $0.7 million in accrued research and development expense, and $0.4 million in accrued and other non-current liabilities, offset by increases of $0.1 million in accounts payable, $2.1 million in prepaid expenses and other current assets, and $0.3 million in deposits and other long-term assets.

During the six months ended June 30, 2023, cash used in operating activities was $71.1 million, which consisted of net loss of $69.2 million, adjusted by non-cash charges of $15.1 million and net changes in our operating assets and liabilities of $17.0 million. The non-cash charges consisted primarily of depreciation and amortization expense of $3.7 million, net amortization of premiums and discounts on marketable securities of $1.8 million and amortization of debt discount and issuance costs of $0.6 million, stock-based compensation of $5.8 million and non-cash operating lease expense of $6.8 million. The change in our operating assets and liabilities was primarily due to decreases of $2.2 million in accrued compensation, $2.3 million in accrued and other non-current liabilities, $1.2 million in accrued research and development expense, $12.3 million in lease liability, $2.3 million in deferred revenue, $1.3 million in accounts payable and increases of $3.0 million in deposits and other long-term assets and $1.6 million in prepaid expenses and other current assets.

Cash Provided by Investing Activities

During the six months ended June 30, 2024, cash provided by investing activities was $11.4 million, which consisted of $14.5 million in proceeds from the maturity of marketable securities and $0.1 million in proceeds from

the sale of marketable securities, offset by $3.1 million in purchases of marketable securities and $0.1 million of capital expenditures to purchase property and equipment.

During the six months ended June 30, 2023, cash provided by investing activities was $45.8 million, which consisted of $66.9 million in proceeds from the maturity of marketable securities, offset by $17.8 million in purchases of marketable securities and $3.3 million of capital expenditures to purchase property and equipment.

Cash Provided by Financing Activities

During the six months ended June 30, 2024, cash provided by financing activities was $35.2 million, which primarily consisted of $32.5 million in proceeds from public offering, $5.6 million in proceeds from the issuance of common stock under the 2022 ATM Offering program, $0.1 million in proceeds from the issuance of common stock under the ESPP, and $0.1 million in proceeds from exercise of common stock and warrants, offset by $2.2 million in financing and offering costs, $0.8 million in taxes paid related to net share settlement of restricted stock units and $0.1 million in payment of financing lease.

During the six months ended June 30, 2023, cash provided by financing activities was $9.7 million, which primarily consisted of $9.9 million in proceeds from long-term debt, net of debt discount and issuance costs, $2.6 million in proceeds from the issuance of common stock under the 2022 ATM Offering program, and $0.5 million in proceeds from the issuance of common stock under the employee stock purchase plan, offset by $2.5 million in financing and offering costs, $0.7 million in taxes paid related to net share settlement of restricted stock units and $0.1 million in payment of financing lease.

Contractual Obligations and Commitments

We lease office and laboratory space in facilities at several locations in California and Massachusetts. The terms of our lease agreements have expiration dates between 2024 to 2033. The total future minimum lease payments under the agreements are $91.2 million, of which $6.5 million of the payments are due in 2024. See Note 6 to our condensed consolidated financial statements.

We are party to license agreements pursuant to which we have in-licensed various intellectual property rights. The license agreements obligate us to make certain milestone payments related to achievement of specified events, as well as royalties in the low-single digits based on sales of licensed products. During the three and six months ended June 30, 2024 and 2023, no royalties were due from the sales of licensed products. See Note 9 to our condensed consolidated financial statements for additional information.

From time to time, in the normal course of business, we enter into contracts with CROs for clinical trials, CMOs for clinical supply manufacturing and with vendors for preclinical research studies and other services and products for operating purposes, which generally provide for termination within 30 days of notice. Therefore, all such contracts are cancelable contracts and not included in the table above.

Critical Accounting Policies and Use of Estimates

This discussion and analysis of financial condition and results of operation is based on our unaudited interim condensed consolidated financial statements, which have been prepared in accordance with accounting principles generally accepted in the United States. The preparation of financial statements requires management to make estimates and judgments that affect the reported amounts of assets and liabilities and disclosures of contingent assets and liabilities as of the date of the financial statements and the reported amounts of expenses during the reporting period. On an ongoing basis, management evaluates its estimates, including those related to preclinical study trial accruals, fair value of assets and liabilities, and the fair value of common stock and warrant liability and stock-based compensation. Management bases its estimates on historical experience and on various other market-specific and relevant assumptions that management believes to be reasonable under the circumstances. Actual results could differ from those estimates.

There have been no changes to our critical accounting policies since we filed our Annual Report on Form 10-K for the year ended December 31, 2023 with the SEC on March 5, 2024. For a description of our critical accounting policies, please refer to that Annual Report on Form 10-K.

Recent Accounting Pronouncements

Refer to Note 2. Summary of Significant Accounting Policies in the notes to our unaudited interim condensed consolidated financial statements in Part I, Item 1 of this Quarterly Report, for a discussion of recent accounting pronouncements.

Item 3. Quantitative and Qualitative Disclosures About Market Risk

Interest Rate Risk

There have been no material changes in market risk from the information provided in "Item 7A. Quantitative and Qualitative Disclosures About Market Risk" in our Annual Report on Form 10-K for the year ended December 31, 2023.

Item 4. Controls and Procedures

Evaluation of Disclosure Controls and Procedures

As of June 30, 2024, our management, with the participation of our principal executive, financial and accounting officers, performed an evaluation of the effectiveness of the design and operation of our disclosure controls and procedures as defined in Rules 13a-15(e) and 15d-15(e) of the Exchange Act. Our disclosure controls and procedures are designed to ensure that information required to be disclosed in the reports 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 the principal executive, financial and accounting officers, to allow timely decisions regarding required disclosures.

Any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving the desired control objective, and management necessarily applies its judgment in evaluating the cost-benefit relationship of possible controls and procedures. Based on this evaluation, our Chief Executive Officer and Chief Financial Officer concluded that, as of June 30, 2024, the design and operation of our disclosure controls and procedures were effective at the reasonable assurance level.

Changes in Internal Control over Financial Reporting

There was no change in our internal control over financial reporting identified in connection with the evaluation required by Rule 13a-15(e) and 15d-15(e) of the Exchange Act that occurred during the three and six months ended June 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

From time to time, we may become involved in litigation or other legal proceedings. We are not currently a party to any litigation or legal proceedings that, in the opinion of our management, are likely to have a material adverse effect on our business, however, we have made note of an ongoing matter below. Regardless of the outcome, litigation can have an adverse impact on us because of defense and settlement costs, diversion of management resources and time and other factors.

On June 17, 2024, Plaintiff Tammy Beal, a purported Gritstone shareholder, filed a putative class action complaint in the United States District Court, Northern District Court of California, or the Court. Plaintiff names the Company and certain of its officers as defendants (collectively, "Defendants"), and asserts claims under Section 10(b) and 20(a) of the Exchange Act and Rule 10b-5 promulgated thereunder, and alleges, among other things, that the Defendants made false and misleading statements concerning the status of the Company's BARDA contract and its Phase 2b CORAL study. On July 3, 2024, the Court entered an order providing that Defendants' obligation to answer, move, or otherwise respond to any complaint is deferred until after the Court appoints a lead plaintiff and lead counsel. That appointment process remains ongoing. The Company believes these claims are without merit and intends to vigorously defend against these claims. There can be no assurance that the Company will prevail on its claims.

ITEM 1A. Risk Factors

Investing in our common stock involves a high degree of risk. You should carefully consider the risks described below, as well as the other information in this report, including our financial statements and the related notes and "Management's Discussion and Analysis of Financial Condition and Results of Operations," before deciding whether to invest in our common stock. The occurrence of any of the events or developments described below, or in Part I, Item 1A of our Annual Report on Form 10-K for the year ended December 31, 2023, filed with the SEC on March 5, 2024 could have a material adverse effect on our business, results of operations, financial condition, prospects and stock price. In such an event, the market price of our common stock could decline, and you may lose all or part of your investment. Many of the following risks and uncertainties are, and will be, exacerbated by the COVID-19 pandemic, inflation, the high interest rate environment, and any worsening of the global business and economic environment as a result. Additional risks and uncertainties not presently known to us or that we currently deem immaterial may also impair our business operations.

Other than disclosed in this section, there have been no material changes to the risk factors set forth in Part I, Item 1A of our Annual Report on Form 10-K for the year ended December 31, 2023 filed with the SEC on March 5, 2024.

Risks Related to Our Limited Operating History, Financial Condition and Capital Requirements

We are restricted in our corporate activities by our existing debt facility.

On July 19, 2022, we entered into the Loan Agreement with Hercules, SVB, and certain financial institutions or other entities from time-to-time party thereto (the "Lenders") pursuant to which the Lenders made available to us a secured term loan facility in an aggregate principal amount of up to $80 million. We immediately drew $20.0 million under this facility upon entry into the Loan Agreement and have subsequently drawn another $20.0 million under this facility. In connection with the Loan Agreement, we granted the Lenders a security interest in substantially all of our personal property and other assets, other than our intellectual property. The Loan Agreement contains customary affirmative and restrictive covenants and representations and warranties, including a covenant against the occurrence of a change in control (as defined by the Loan Agreement), financial reporting obligations, and certain limitations on indebtedness, liens (including a negative pledge on intellectual property and other assets), investments, distributions (including dividends), collateral, investments, transfers, mergers or acquisitions, taxes, corporate changes, and deposit accounts. Subject to certain conditions, so long as our market capitalization is equal to or less than $400.0 million, we are subject to a minimum liquidity requirement equal to the then outstanding balance under the Loan Agreement multiplied by 0.55 or 0.45, which multiplier depends on whether we achieve certain performance milestones (the "Minimum Liquidity Requirement"). If we are unable to raise additional funds, secure a waiver or renegotiate the terms of the Loan Agreement, we expect to be in default of the Minimum Liquidity Requirement in the fourth quarter of 2024. Upon the occurrence of an event of default, a default interest rate of an additional 4.0% may be applied to the outstanding principal and interest payments due, the Lenders may declare all outstanding obligations immediately due and payable and take such other actions as set forth in the Loan Agreement, including proceeding against the collateral securing such indebtedness, in which case, our existing cash, cash equivalents and investments will only be

sufficient to fund our operations into the fourth quarter of 2024. Such increased interest charges, accelerated repayment, proceedings against the collateral or other actions will have a negative impact on our business, financial condition and results of operations.

We will require substantial additional financing to achieve our goals, and a failure to obtain such necessary capital when needed on acceptable terms, or at all, could force us to delay, limit, reduce or terminate our product development programs, any future commercialization efforts or other operations.

Since our inception, we have invested a significant portion of our efforts and financial resources in research and development activities for tumor-specific cancer immunotherapies and infectious disease programs in addition to establishing our in-house manufacturing capabilities. Our preclinical studies, clinical trials and additional research and development activities will require substantial funds to complete. We anticipate that we will continue to expend substantial resources for the foreseeable future in connection with the development of our current and any future product candidates we may choose to pursue, as well as the continued development of our manufacturing capabilities and other corporate uses. Specifically, in the near term, we expect to incur substantial expenses as we advance GRANITE, SLATE, and CORAL through clinical development, seek regulatory approval, prepare for and, if approved, proceed to commercialization, continue our research and development efforts and invest in our manufacturing facility. These expenditures will include costs associated with conducting preclinical studies and clinical trials, obtaining regulatory approvals, and manufacturing and supply, as well as marketing and selling any products approved for sale. In addition, other unanticipated costs may arise. Because the outcome of any of our preclinical studies or clinical trials is highly uncertain, we cannot reasonably estimate the actual amounts necessary to successfully complete the development and commercialization of GRANITE, SLATE, CORAL or any other current or future immunotherapy product candidates.

Our operating plans and other demands on our capital resources may change as a result of many factors currently unknown to us, and we may need to seek additional funds sooner than planned, through public or private equity or debt financings or other sources, such as strategic collaborations. If we raise additional funds through licensing or collaboration arrangements with third parties, we may have to relinquish valuable rights to our product candidates or grant licenses on terms that are not favorable to us. In addition, we may seek additional capital due to favorable market conditions or strategic considerations even if we believe we have sufficient funds for our current or future operating plans. Attempting to secure additional financing may divert our management from our day-to-day activities, which may adversely affect our ability to develop our product candidates. In addition, we cannot guarantee that future financing will be available in sufficient amounts or on terms acceptable to us, if at all.

Our future capital requirements depend on many factors, including:

- the scope, progress, results and costs of developing of our current and any future product candidates, including conducting preclinical studies and clinical trials, either on our own or in collaboration with others;
- potential delays in our ongoing clinical trials, including for reasons beyond our control, such supply chain interruptions, geo-political actions, including war and regional conflicts around the world or cybersecurity events;
- the timing of, costs involved in, and outcome of regulatory review of our product candidates;
- the number and characteristics of any additional product candidates we develop or acquire;
- the timing and amount of any milestone, royalty or other payments we are required to make pursuant to any current or future collaboration or license agreement;
- the cost and timing of future commercialization activities, including legal, compliance, marketing, sales and distribution costs, for any product candidates for which we receive marketing approvals;
- our ability to maintain existing, and establish new, strategic collaborations and licensing or other arrangements and the financial terms of any such arrangement, including the timing and amount of any future milestone, royalty or other payments due under any such arrangement;
- any product liability or other lawsuits related to our product candidates;
- the expenses needed to attract, hire and retain skilled personnel;
- the costs associated with being a public company;

- the costs involved in preparing, filing, prosecuting, maintaining, defending and enforcing our intellectual property portfolio;
- the timing, receipt and amount of sales of our future approved products, if any; and
- general economic conditions and trends, including inflation and market volatility, interest rate fluctuations, the ongoing labor shortage, recent instability in the global banking sector, the federal debt ceiling and budget and the potential for government shutdowns.

Additional funds may not be available when we need them, on terms that are acceptable to us, or at all. If adequate funds are not available to us on a timely basis, we may be required to, among other things:

- delay, limit, reduce or terminate preclinical studies, clinical trials or other research and development activities or eliminate one or more of our development programs altogether; or
- delay, limit, reduce or terminate our efforts to establish manufacturing and sales and marketing capabilities or other activities that may be necessary to commercialize any of our product candidates that receive regulatory approval, or reduce our flexibility in developing or maintaining our sales and marketing strategy.

Our ability to raise additional funds may be adversely impacted by worsening global economic conditions and disruptions to and volatility in the credit and financial markets in the United States and worldwide, including as a result of increases in inflation and market volatility, interest rate fluctuations, the uncertainty with respect to the federal debt ceiling and budget and the related potential for government shutdowns, the ongoing labor shortage, disruptions to global supply chains, and regional conflicts around the world. Moreover, there has been recent turmoil in the global banking system. For example, in March 2023, Silicon Valley Bank ("SVB"), was closed by the California Department of Financial Protection and Innovation, which appointed the Federal Deposit Insurance Corporation ("FDIC") as receiver for SVB. While the FDIC subsequently stated that all depositors of SVB would be made whole, there is no guarantee that the federal government would similarly guarantee all depositors in the event of future bank closures. Moreover, events such as the closure of SVB, in addition to global macroeconomic conditions discussed above, may cause further turbulence and uncertainty in the capital markets. Further deterioration of the macroeconomic environment and any regulatory action taken in response thereto may adversely affect our business, operating results, and financial condition. We also could be required to seek funds through arrangements with collaborators or others that may require us to relinquish rights or jointly own some aspects of our technologies or product candidates that we would otherwise pursue on our own. We may not realize revenue from sales of products or royalties from licensed products in the foreseeable future, and no such revenue will be realized unless and until a product candidate is clinically tested, approved for commercialization and successfully marketed.

To date, we have primarily financed our operations through the sale of equity securities. We will be required to seek substantial additional funding in the future and currently intend to do so through collaborations, public or private equity offerings or debt financings, credit or loan facilities or a combination of one or more of these funding sources. Our ability to raise additional funds will depend on financial, economic and other factors, many of which are beyond our control. Additional funds may not be available to us on acceptable terms or at all. If we raise additional funds by issuing equity securities, our stockholders will suffer dilution and the terms of any financing may adversely affect the rights of our stockholders. In addition, as a condition to providing additional funds to us, future investors may demand, and may be granted, rights superior to those of existing stockholders. Debt financing, if available, is likely to involve restrictive covenants, repayment obligations, or other similar restrictions that may affect our business and limit our flexibility in conducting future business activities, and, in the event of insolvency, debt holders would be repaid before holders of our equity securities received any distribution of our corporate assets. If we are unsuccessful in raising additional funds prior to breaching the Minimum Liquidity Requirement in our Loan Agreement, we expect to explore a range of strategic alternatives to maximize stakeholder value, which may include, without limitation, a sale of assets or the initiation of bankruptcy proceedings under Chapter 11 of the U.S. Bankruptcy Code.

Risks Related to Our Business

A significant portion of the funding for the continued development of our next-generation samRNA vaccine candidate containing Spike plus other viral targets to protect against COVID-19 is currently expected to come from BARDA funds, whether under the BARDA Contract or as administered through the RRPV Consortium. If BARDA were to decline to pursue any of the gated stages, eliminate, reduce, delay, or object to extensions for funding available to us under the BARDA Contract, this could have a significant, negative impact on our revenues and cash flows, and we may be forced to suspend or terminate the continued development of the product candidate or obtain alternative sources of funding.

We anticipate that a significant portion of the funding for the continued development of our next generation self-amplifying mRNA vaccine candidate containing Spike plus other viral targets to protect against COVID-19 may come from the BARDA Contract. As awarded, the existing BARDA Contract provides for funding of up to an estimated $433.0 million to conduct a 10,000 participant randomized Phase 2b comparative clinical trial evaluating our self-amplifying RNA vaccine candidate containing Spike plus other viral targets to protect against COVID-19. The base period under the BARDA Contract includes government funding of only up to approximately $10.0 million for performance of certain milestones such as preparation of protocol synopsis and submission of an investigational new drug ("IND") application, with the remaining $423 million available at BARDA's option to conduct the comparative clinical trial.

In late 2023, BARDA informed us that any potential funding beyond the base period of the BARDA Contract is expected to be administered under a new award made by the RRPV Consortium. In early 2024, we applied to the RRPV Consortium for funding of our Phase 2b CORAL clinical trial extending beyond the base period of the BARDA Contract, seeking substantively similar agreement terms as the BARDA Contract. There is no certainty that the RRPV Consortium, which selects awardees at BARDA's discretion, will accept our application and on what terms. The RRPV Request for Project Proposals included the potential to begin a Phase 2b clinical trial by March 31, 2024, or at BARDA's discretion by October 1, 2024, to align with the Fall 2024 COVID-19 strain change. As of the date of this Quarterly Report on Form 10-Q, we have not received any award from the RRPV Consortium or BARDA to extend our Phase 2b CORAL clinical trial beyond the base period of the BARDA Contract.

Our ability to receive any of the initially identified $423.0 million in additional funding provided for under the BARDA Contract is dependent on BARDA electing to continue to fund additional two gated stages or the RRPV Consortium accepting our application, which would occur only at BARDA's direction and in its sole discretion. The base period for performance under the BARDA Contract is currently scheduled to run from September 2023 to March 31, 2025, though BARDA may grant a no-cost extension to the base period to allow for regulatory negotiations to continue. The option periods for the two additional gated stages under the BARDA Contract were scheduled to run from January 2024 to March 2026 and from July 2024 to July 2026. These periods of performance may be adjusted if Gritstone’s RRPV application is accepted.

As a standard government contract, BARDA is entitled to terminate the BARDA Contract for convenience at any time, in whole or in part, and is not required to provide continued funding beyond reimbursement of amounts currently incurred and obligated by us as a result of contract performance. In addition, activities covered under the base period may ultimately cost more than is covered by the BARDA Contract and may require a longer performance period to complete than is remaining under the terms of the BARDA Contract. BARDA is not required to provide funding above the approximately $10.0 million currently obligated for the base period of the BARDA Contract, nor is BARDA required to extend the base period of performance or elect to pursue any of the gated stages. As of June 30, 2024, we received $9.4 million of the $10.0 million obligated for the base period of the BARDA Contract. If activities covered under the base period cost us more than the approximately $10.0 million currently obligated for the base period under the BARDA Contract, and we are unable to secure additional funding from BARDA to complete performance of the base period activities, we would have to bear the cost to complete the activities. Further, if we are unable to complete the base period activities during the base period due to circumstances that may be either within or outside of our control, including, among others, any potential delays in sourcing an approved comparator vaccine, and BARDA is unwilling to allow for additional time, then BARDA may decide to terminate the BARDA Contract or deny the application to the RRPV Consortium.

Moreover, the continuation of the BARDA Contract or receipt of a new award administered by the RRPV Consortium for the effort intended for the BARDA Contract option periods would primarily depend on our ability to initiate a Phase 2b clinical trial within BARDA's timeline and on our compliance with certain operating procedures and protocols, assuming federal funds remain available.

Further, as an organization, we are relatively new to government contracting and the related regulatory compliance obligations, and are continuing to develop and implement our internal compliance processes. BARDA

may suspend or terminate the BARDA Contract, opt not to exercise the remaining option periods, or deny the application to the RRPV Consortium should we fail to achieve key milestones or fail to comply with the operating procedures and processes approved by BARDA and its audit agency. There can be no assurance that we will be able to achieve these milestones or continue to comply with these procedures and protocols, and there can also be no assurance that the BARDA Contract will not be terminated, that the BARDA Contract will be extended through the exercise of the gating periods, that any such extensions would be on terms favorable to us, or that we will otherwise obtain the funding that we anticipate to obtain under the BARDA Contract or an award from the RRPV Consortium. The availability and focus for any BARDA funding will likely be finite and may require us to compete with other technologies, both similar and disparate. If the BARDA Contract is terminated or suspended, if there is any reduction or delay in funding under the BARDA Contract, or if BARDA determines not to elect to pursue any of the gated stages under the BARDA Contract or select Gritstone for a new award administered by the RRPV Consortium, our revenues and cash flows would be significantly and negatively impacted and we may be forced to seek alternative sources of funding, which may not be available on non-dilutive terms, terms favorable to us or at all. If alternative sources of funding are not available, we may be forced to suspend or terminate development activities for our next-generation self-amplifying mRNA vaccine candidate containing Spike plus other viral targets to protect against COVID-19, which could materially harm our business.

It may take considerable time and expense to resolve the clinical hold that has been placed by the FDA on our Phase 2b CORAL clinical trial we proposed in our IND for our CORAL COVID-19 vaccine product candidate and no assurance can be given that the FDA will remove the clinical hold, in which case our business and financial prospects may be materially adversely affected.

In December 2023, we were notified by the FDA that our Phase 2b CORAL clinical trial had been placed on clinical hold. In January 2024, we received the formal clinical hold letter from the FDA, identifying certain CMC and clinical deficiencies. The FDA informed us that, among other changes, we will be required to use GMP-grade materials in the manufacture of the vaccine as well as implement minor changes in the clinical study protocol. In May 2024, we submitted a response to the FDA's letter in an effort to remove the clinical hold from our IND application. Our response included proposals to re-manufacture our CORAL vaccine candidate to be used in the Phase 2b CORAL clinical trial with GMP-grade materials. In June 2024, we received a response from the FDA informing us that the FDA has not removed the clinical hold on our IND application. We are working on implementing these identified changes through further communications with the FDA in an effort to remove the clinical hold from our IND application.

If the FDA does not accept the responses we plan to provide, it may take significant additional time and expense, both of which are currently uncertain, for us to fully address the FDA's concerns. It is possible that we will be unable to fully address the FDA's concerns and, as a result, that the clinical hold may never be lifted and we may never be able to initiate our Phase 2b CORAL clinical trial in the United States, which could have a material adverse effect on our business, financial condition, results of operations and prospects.

Risks related to Our Common Stock

The price of our common stock does not meet the requirements for continued listing on The Nasdaq Global Select Market. If we fail to regain compliance with the minimum listing requirements, our common stock will be subject to delisting. Our ability to publicly or privately sell equity securities and the liquidity of our common stock could be adversely affected if our common stock is delisted.

The continued listing standards of The Nasdaq Global Select Market (Nasdaq), require, among other things, that the minimum bid price of a listed company's stock be at or above $1.00. If the closing minimum bid price is below $1.00 for a period of more than 30 consecutive trading days, the listed company will fail to be in compliance with Nasdaq's listing rules and, if it does not regain compliance within the grace period, will be subject to delisting. We cannot provide any guarantee that we will regain compliance during the grace period or be able to maintain compliance with Nasdaq's listing requirements in the future. If we are not able to regain compliance during the grace period, or any extension of the grace period for which we may be eligible, our common stock will be subject to delisting. Delisting from Nasdaq could adversely affect our ability to raise additional financing through the public or private sale of equity securities, would significantly affect the ability of investors to trade our securities and would negatively affect the value and liquidity of our common stock. Delisting could also have other negative results, including the potential loss of confidence by employees, the loss of institutional investor interest and fewer business development opportunities.

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

Unregistered Sales of Equity Securities

Not applicable.

Use of Proceeds

Not applicable.

Issuer Purchases of Equity Securities

Not applicable.

ITEM 3. Defaults Upon Senior Securities

None.

ITEM 4. Mine Safety Disclosures

Not applicable.

ITEM 5. Other Information

Rule 10b5-1 Trading Plans

During the quarter ended June 30, 2024, Karin Jooss, our Executive Vice President of Research & Development, adopted a "Rule 10b5-1 trading arrangement" as defined in Regulation S-K, Item 408, intended to satisfy the affirmative defense conditions of Rule 10b5-1(c), as amended (the "Rule"). The Rule 10b5-1 trading arrangement was adopted on June 18, 2024 and provides for the potential sale of up to 465,000 shares of our common stock, including shares issuable upon the exercise of vested stock options, so long as the market price of our common stock is higher than certain minimum threshold prices specified in the Rule 10b5-1 trading arrangement. The Rule 10b5-1 trading arrangement will expire on September 16, 2025.

The Rule 10b5-1 trading arrangement included a representation from Ms. Jooss to the broker administering the plan that she was not in possession of any material nonpublic information regarding the company or the securities subject to the plan. A similar representation was made to the company in connection with the adoption of the plan under the company's insider trading policy. Those representations were made as of the date of adoption of the Rule 10b5-1 trading arrangement, and speak only as of that date. In making those representations, there is no assurance with respect to any material nonpublic information of which Ms. Jooss was unaware, or with respect to any material nonpublic information acquired by the officer or the company after the date of the representation.

ITEM 6. EXHIBITS

Exhibit Number	Exhibit Description	Incorporated by Reference			Filed Herewith
		Form	Date	Number	
3.1(a)	Amended and Restated Certificate of Incorporation.	8-K	10/02/2018	3.1	
3.1(b)	Certificate of Amendment to Amended and Restated Certificate of Incorporation.	8-K	05/06/2021	3.1	
3.2	Amended and Restated Bylaws.	8-K	05/06/2021	3.2	
4.1	Reference is made to exhibits 3.1 through 3.2.				
4.2	Form of Common Stock Certificate.	S-1/A	09/17/2018	4.2	
4.3	Description of Common Stock.	10-K	03/10/2022	4.3	
4.4	Form of Common Stock Warrant.	8-K	04/02/2024	4.1	
4.5	Form of Pre-Funded Warrant.	8-K	04/02/2024	4.2	
10.1	Second Amendment to Office Building Net Lease Agreement effective as of May 10, 2024.				X
31.1	Certification of Chief Executive Officer of Gritstone bio, Inc., as required by Rule 13a-14(a) or Rule 15d-14(a) under the Securities Exchange Act of 1934, as amended.				X
31.2	Certification of Chief Financial Officer of Gritstone bio, Inc., as required by Rule 13a-14(a) or Rule 15d-14(a) under the Securities Exchange Act of 1934, as amended.				X
32.1*	Certification by the Chief Executive Officer and Chief Financial Officer, as required by Rule 13a-14(b) or Rule 15d-14(b) under the Securities Exchange Act of 1934, as amended, and Section 1350 of Chapter 36 of Title 18 of the United States Code (18 U.S.C. §1350).				X
101.INS	Inline XBRL Instance Document				X
101.SCH	Inline XBRL Taxonomy Extension Schema With Embedded Linkbase Documents				X
104	The cover page from the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2024 has been formatted in Inline XBRL.				X

* The certification attached as Exhibit 32.1 that accompanies this report is not deemed filed with the SEC and is not to be incorporated by reference into any filing of Gritstone bio, Inc. under the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended, whether made before or after the date of this Form 10-Q, irrespective of any general incorporation language contained in such filing.

\# Portions of the exhibit have been omitted pursuant to Item 601(b)(10)(iv) of Regulation S-K. A copy of any omitted portions will be furnished to the SEC upon request.

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.

Gritstone bio, Inc.

Date: August 13, 2024

By: /s/ Andrew Allen
Andrew Allen, M.D., Ph.D.
President and Chief Executive Officer
(Principal Executive Officer)

By: /s/ Vassiliki Economides
Vassiliki Economides
Chief Financial Officer
(Principal Financial Officer)

Exhibit 10.1

SECOND AMENDMENT TO OFFICE BUILDING NET LEASE

This Second Amendment to Office Building Net Lease (this "**Second Amendment**") is made and entered into as of May 10, 2024 (the "**Effective Date**"), by and between the undersigned owners of the Property (formerly Hacienda Portfolio Venture, LLC, a Delaware limited liability company ("**Landlord**"), and Gritstone bio, Inc. (formerly known as Gritstone Oncology, Inc.), a Delaware corporation ("**Tenant**"), with reference to the matters set forth hereinafter.

RECITALS

A. WHEREAS, Landlord and Tenant are parties to that certain Office Building Net Lease dated as of March 24, 2017 ("**Original Lease**") as amended by the First Amendment to the Original Lease dated as of December 8, 2017 and as confirmed by the Confirmation of Terms of Lease dated October 23, 2017, (collectively the "**Existing Lease**") for that certain premises containing approximately 42,620 rentable square feet (the "**Leased Premises**") of the Building commonly known as 4696-4698 Willow Road, Pleasanton, California (Building One).

B. WHEREAS, the Term Expiration Date of the Existing Lease means November 30, 2024.

C. WHEREAS, on or about the Fall of 2018 the Project was the subject of a lot split leaving the Building on an approximately 2.9697 acres of real property, a description of which is attached hereto and incorporated herein as Exhibit A: Property Description (the "**Property**"). For clarity the Property no longer contains "Common Areas" as defined in the Existing Lease.

D. WHEREAS, Landlord and Tenant desire to further amend the Existing Lease as set forth in this Second Amendment.

AGREEMENT

NOW, THEREFORE, in consideration of the foregoing RECITALS and the mutual covenants contained herein, and for good and other valuable consideration the receipt and sufficiency of which are hereby acknowledged, the parties hereto agree to modify, replace or supplement the terms of the Existing Lease as follows:

1. Recitals. The Recitals set forth above are incorporated herein by reference into this Second Amendment.

2. Capitalized Terms. All capitalized terms when used herein shall have the same meanings given such terms in the Existing Lease unless expressly superseded by the terms of this Second Amendment.

3. **Security Deposit**. The Security Deposit in the amount of Nine Hundred Ninety-Two Thousand Four Hundred Thirty-Seven Dollars and 58/100 ($992,437.58) previously delivered by Tenant to Landlord in the form of a Letter of Credit under the terms of the Existing Lease has been adjusted downward to the sum of Five Hundred Ninety-Five Thousand Four Hundred Sixty-Two Dollars and 55/100 ($595,462.55). Such $595,462.55 amount shall remain in place during the Extension Lease Term without further adjustment.

4. **Extension Lease Term**. Notwithstanding Section 8.1 of the Existing Lease, the term of the Existing Lease is extended for six (6) full calendar months, commencing on December 1, 2024 and ending at midnight in the last day of the 6th full calendar month thereafter, on May 31, 2025, unless sooner terminated in accordance with the Existing Lease termination provisions ("**Extension Lease Term**").

5. **Tenant's Proportionate Share**. The term "**Tenant's Proportionate Share**" shall be 100% of the Building and 100% of the Property.

6. **Landlord's Work**. None.

7. **Condition of Leased Premises**. "AS IS", with all faults.

8. **Base Monthly Rent**. Base Monthly Rent for the Extension Lease Term for the period of December 1, 2024 through May 31, 2024 shall be the sum of One Hundred Thirty-Four Thousand Two Hundred Fifty-Three Dollars ($134,253.00), per month.

9. **Additional Rent**. Additional Rent and Tenant's Allocated Share of Operating Expenses shall be due and payable as under the Existing Lease at all times during the Extension Lease Term.

10. **Signs**. Section 4.4 of the Existing Lease is reaffirmed. Tenant shall retain its rights as to existing monument signage and on the Building at no charge to Tenant.

11. **Parking**. Basic Lease Information of the Existing Lease is reaffirmed.

12. **Brokers**. Landlord and Tenant hereby warrant to each other that they have had no dealings with any real estate broker or agent in connection with the negotiation of this Second Amendment other than Newmark representing Tenant; and Jones Lang LaSalle and Deerfield Realty Corp. representing Landlord (the "**Brokers**"), who shall be paid a commission pursuant to a separate agreement between Landlord and Brokers, and that they know of no other real estate broker or agent who is entitled to a commission in connection with this Second Amendment. Each party agrees to indemnify and defend the other party against and hold the other party harmless from any and all claims, demands, losses, liabilities, lawsuits, judgments, and costs and expenses (including, without limitation, reasonable attorneys' fees) with respect to any leasing commission or equivalent compensation alleged to be owing on account of any dealings with any real estate broker or agent, other than to the Brokers, occurring by, through or under the indemnifying party.

13. **Advice of Counsel**. Landlord and Tenant each warrants and represents that it has had ample opportunity to perform independent investigation and to seek and obtain legal

representation including, but not limited to, express legal advice with regard to the negotiations which have led to the preparation and signing this Second Amendment. Each party further warrants and represents that it has completed as much independent investigation and obtained as much legal counsel as it determines, in its sole discretion, to be sufficient under the particular circumstances of this Second Amendment or, in the alternative, that it has elected not to do so, notwithstanding the fact that it could have done so. Further, each party warrants and represents that its execution of this Second Amendment is done knowingly and willfully, and without any mistake, fraud, duress or undue influence.

14. **Authority of Parties**. Each party warrants and represents that in executing this Second Amendment, it (1) has the full and unrestricted right, power, capacity and authority to enter into, deliver, execute and perform its obligations under this Second Amendment; and (ii) no further consent or approval is required to permit such party to enter into, execute, deliver and perform its obligations hereunder; and (iii) that this Second Amendment is a valid and binding obligation upon each party, and is enforceable against each party in accordance with the terms hereof; and (iv) the execution, delivery and/or performance of the terms of this Second Amendment will not result in any violation of, be in conflict with, nor constitute a default under any provision of any judgment, decree, order, law or contract to which either party is bound or otherwise accountable.

15. **Further Acts/Cooperation of Parties**. Without further consideration, each party shall execute and deliver such other documents, and perform such further acts, as are reasonably requested by any other party or which may be necessary or convenient to effect the terms/purposes of this Second Amendment.

16. **Binding Upon Successors and Assigns**. This Second Amendment, and each provision hereof, shall be binding upon and inure to the benefit of each party and each party's respective successors, heirs, executors, representatives, beneficiaries and permitted assigns.

17. **Litigation and Attorney's Fees**. Cumulative and in addition to any other relief sought and/or obtained, the prevailing party (or its authorized successors or assigns) in any litigation arising out of, or in relation to, the formation, enforcement or interpretation of this Second Amendment shall be entitled to recover from and against the non- prevailing party, all of the prevailing party's reasonably incurred costs and attorney's fees.

18. **Full Force and Effect**. Except as supplemented and/or modified by this Second Amendment, to the best of Landlord's and Tenant's knowledge, the Existing Lease is in full force and effect and neither party is in default of its obligations under the Existing Lease and neither party has claims, offsets, or defenses to the enforcement of the Existing Lease. All other terms and conditions of the Existing Lease, as amended hereby, shall remain in full force and effect, as so amended.

19. **Entirety**. Except as provided in this Second Amendment, the Existing Lease is the entire agreement between the parties and there are no agreements or representations between the parties except as expressed herein. Moreover, no subsequent change or modification of the Lease, as amended, shall be binding unless in writing and fully executed by Landlord and Tenant. In the event of a conflict between the terms, conditions, and provisions of the Existing Lease and this Second Amendment, the terms, conditions, and provisions of this Second Amendment shall control.

20. **Miscellaneous**. Any breach of default under any provision of this Second Amendment shall be a breach of default under the Existing Lease and any breach or default under the Existing Lease shall be a breach of default under this Second Amendment.

21. **Counterparts**. This Second Amendment maybe executed in any number of counterparts, all of which shall be deemed an original, but such counterparts, when taken together, shall constitute one agreement. The parties hereto may deliver their signatures to this Second Amendment by facsimile, electronic mail, or other electronic transmission, and agree to accept such digital image of this Second Amendment, as executed, as a true and correct original and admissible as if such signatures were original executed versions of this Amendment.

22. **Effective Date**. This Second Amendment shall be effective only when it has been executed in writing by all of the parties hereto, when such Second Amendment has been delivered by Landlord and Tenant to each other and on such date when the last signatory necessary to execute this Second Amendment shall have executed it.

23. **Waiver**. No delay or omission by either party in exercising any right or power under the Existing Lease or this Second Amendment shall impair any such right or constitute a waiver thereof, unless such waiver is set forth in a written instrument duly executed by that party. A waiver of any covenant, condition or term set forth in the Existing Lease or this Second Amendment shall not be construed as a waiver of any succeeding breach of the same or other covenant, condition or term.

24. **Time of Essence**. Time is of the essence with regard to the time periods set forth in this Second Amendment.

Signatures on next page

IN WITNESS THEREOF, Landlord and Tenant have executed this Second Amendment to the Existing Lease as of the Effective Date.

LANDLORD:		**TENANT:**	
Deerfield 2018 LLC, a California limited liability company Deerfield 2000 LLC, a California limited liability company Deerfield Tasman LLC, a California limited liability company Bianchi Joint Venture, L.P., a California limited liability company		Gritstone bio, Inc., a Delaware corporation	
By:	/s/ Tito J. Bianchi	By:	/s/ Celia Economides
Name:	Tito J. Bianchi, President of Deerfield Realty Corporation	Name:	Celia Economides
Its:	Manager	Its:	Chief Financial Officer
Address	3715 Haven Ave, Suite 210 Menlo Park, CA 94025		
Dated:	May 10, 2024	Dated:	May 10, 2024

Exhibit 31.1

CERTIFICATION PURSUANT TO
RULES 13a-14(a) AND 15d-14(a) UNDER THE SECURITIES EXCHANGE ACT OF 1934,
AS ADOPTED PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Andrew Allen, M.D., Ph.D., certify that:

1. I have reviewed this quarterly report on Form 10-Q of Gritstone bio, 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(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

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

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

Date: August 13, 2024

By: /s/ Andrew Allen

Andrew Allen, M.D., Ph.D.
President and Chief Executive Officer
(Principal Executive Officer)

Exhibit 31.2

CERTIFICATION PURSUANT TO
RULES 13a-14(a) AND 15d-14(a) UNDER THE SECURITIES EXCHANGE ACT OF 1934,
AS ADOPTED PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Vassiliki Economides, certify that:

1. I have reviewed this quarterly report on Form 10-Q of Gritstone bio, 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(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

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

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

Date: August 13, 2024

By: /s/ Vassiliki Economides

Vassiliki Economides
Chief Financial Officer
(Principal Financial Officer)

Exhibit 32.1

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

In connection with the Quarterly Report on Form 10-Q of Gritstone bio, Inc. (the "Company") for the period ended June 30, 2024, as filed with the Securities and Exchange Commission on the date hereof (the "Report"), Andrew Allen, M.D., Ph.D., President and Chief Executive Officer (Principal Executive Officer) of the Company, and Vassiliki Economides, Chief Financial Officer (Principal Financial Officer) of the Company, respectively, hereby certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that:

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

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

Date: August 13, 2024

/s/ Andrew Allen

Andrew Allen, M.D., Ph.D.
President and Chief Executive Officer
(Principal Executive Officer)

Date: August 13, 2024

/s/ Vassiliki Economides

Vassiliki Economides
Chief Financial Officer
(Principal Financial Officer)