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, 2023

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 001-39208

Beam Therapeutics Inc.

(Exact name of Registrant as specified in its Charter)

Delaware	**81-5238376**
(*State or other jurisdiction of incorporation or organization*)	**(*I.R.S. Employer Identification No.*)**
238 Main Street **Cambridge, MA**	**02142**
(*Address of principal executive offices*)	**(*Zip Code*)**

Registrant's telephone number, including area code: (857) 327-8775

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

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock, par value $0.01 per share	**BEAM**	**Nasdaq Global Select Market**

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

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

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

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

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

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

The number of shares of registrant's common stock outstanding as of August 1, 2023 was 79,199,501.

CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

This Quarterly Report on Form 10-Q contains forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, or the Securities Act, and Section 21E of the Securities Exchange Act of 1934, as amended, or the Exchange Act. Such forward-looking statements reflect, among other things:

- our current expectations and anticipated results of operations;
- our expectations regarding the initiation, timing, progress and results of our clinical trials, including our Phase 1/2 clinical trial designed to assess the safety and efficacy of BEAM-101 for the treatment of sickle cell disease, which we refer to as our BEACON trial, and our Phase 1/2 clinical trial designed to assess the safety and efficacy of BEAM-201 for the treatment of relapsed, refractory T-cell acute lymphoblastic leukemia/T cell lymphoblastic lymphoma;
- our expectations regarding the initiation, timing, progress and results of our research and development programs and preclinical studies, including our expectations that we will submit regulatory applications for BEAM-302 in the first quarter of 2024 and BEAM-301 in the first half of 2024;
- our ability to develop and maintain a sustainable portfolio of product candidates;
- our ability to develop life-long, curative, precision genetic medicines for patients through base editing;
- our ability to create a hub for partnering with other companies;
- our plans for preclinical studies for product candidates in our pipeline;
- our ability to advance any product candidates that we may develop and successfully complete any clinical trials or preclinical studies, including the manufacture of any such product candidates;
- our ability to pursue a broad suite of clinically validated delivery modalities;
- our expectations regarding our ability to generate additional novel lipid nanoparticles that we believe could accelerate novel nonviral delivery of gene editing or other nucleic acid payloads to tissues beyond the liver and our ability to expand the reach of our programs;
- the scope of protection we are able to establish and maintain for intellectual property rights covering our product candidates and technology;
- developments related to our competitors and our industry;
- the expected timing, progress and success of our collaborations with third parties, including any future payments we may receive under our collaboration and license agreements, and our ability to identify and enter into future license agreements and collaborations;
- developments related to base editing technologies;
- our ability to successfully develop our delivery modalities and obtain and maintain approval for our product candidates;
- our ability to successfully establish and maintain a commercial-scale current Good Manufacturing Practice, or cGMP, manufacturing facility and our expectations that we will initiate cGMP compliant operations in late 2023;
- regulatory developments in the United States and foreign countries;
- our ability to attract and retain key scientific and management personnel;
- our expectations regarding the strategic and other potential benefits of any acquisition of additional technologies;
- our estimates regarding the period over which we believe that our existing cash, cash equivalents and marketable securities, will be sufficient to fund our operating expenses and capital expenditure requirements; and
- the impact on our business of macro-economic conditions, as well as the prevailing level of macro-economic, business, and operational uncertainty, including as a result of geopolitical events or other global or regional events.

All of these statements are subject to known and unknown important risks, uncertainties and other factors that may cause our actual results, performance or achievements, market trends, or industry results to differ materially from those expressed or implied by such forward-looking statements. Therefore, any statements contained herein that are not statements of historical fact may be forward-looking statements and should be evaluated as such. Without limiting the foregoing, the words “anticipate,” “expect,” “suggest,” “plan,” “believe,” “intend,” “project,” “forecast,” “estimates,” “targets,” “projections,” “should,” “could,” “would,” “may,” “might,” “will,” and the negative thereof and similar words and expressions are intended to identify forward-looking statements. These forward-looking statements are subject to a number of risks, uncertainties and assumptions, including those described in “Risk Factors” in Part II, Item 1A of this Quarterly Report on Form 10-Q and “Risk Factors Summary” and “Risk Factors” in Part I, Item 1A. of our Annual Report on Form 10-K for the fiscal year ended December 31, 2022, or the 2022 Form 10-K. Unless legally required, we assume no obligation to update any such forward-looking information to reflect actual results or changes in the factors affecting such forward-looking information.

When we use the terms “Beam,” the “Company,” “we,” “us” or “our” in this Quarterly Report on Form 10-Q, we mean Beam Therapeutics Inc. and its subsidiaries on a consolidated basis, unless the context indicates otherwise.

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PART I. FINANCIAL INFORMATION

Item 1. Financial Statements (Unaudited)

Beam Therapeutics Inc.
Condensed Consolidated Balance Sheets
(*Unaudited*)
(in thousands, except share and per share amounts)

	June 30, 2023	December 31, 2022
Assets		
Current assets:		
Cash and cash equivalents	$ 225,544	$ 232,767
Marketable securities	847,472	845,367
Prepaid expenses and other current assets	21,789	14,762
Total current assets	1,094,805	1,092,896
Property and equipment, net	128,203	115,620
Restricted cash	15,422	12,754
Operating lease right-of-use assets	114,075	118,513
Other assets	1,382	1,931
Total assets	$ 1,353,887	$ 1,341,714
Liabilities and stockholders' equity		
Current liabilities:		
Accounts payable	$ 6,886	$ 9,029
Accrued expenses and other current liabilities	37,519	48,059
Derivative liabilities	13,600	18,300
Current portion of deferred revenue	139,127	135,974
Current portion of lease liability	11,492	10,380
Current portion of equipment financing liability	912	1,853
Total current liabilities	209,536	223,595
Long-term lease liability	163,851	168,625
Long-term equipment financing liability	875	1,154
Contingent consideration liabilities	10,588	12,463
Long-term portion of deferred revenue	156,202	202,179
Other liabilities	1,192	224
Total liabilities	542,244	608,240
Commitments and contingencies (See Note 7, *License agreements* and Note 8, *Collaboration and license agreements*)		
Stockholders' equity:		
Preferred stock, $0.01 par value; 25,000,000 shares authorized, and no shares issued or outstanding at June 30, 2023 and December 31, 2022, respectively	—	—
Common stock, $0.01 par value; 250,000,000 shares authorized, 77,953,502 and 71,277,339 issued and outstanding at June 30, 2023 and December 31, 2022, respectively	780	712
Additional paid-in capital	2,049,476	1,792,554
Accumulated other comprehensive (loss) income	(2,015)	(2,430)
Accumulated deficit	(1,236,598)	(1,057,362)
Total stockholders' equity	811,643	733,474
Total liabilities and stockholders' equity	$ 1,353,887	$ 1,341,714

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

Beam Therapeutics Inc.
Condensed Consolidated Statements of Operations and Other Comprehensive Loss
(*Unaudited*)
(in thousands, except share and per share amounts)

	Three Months Ended June 30,		Six Months Ended June 30,	
	2023	2022	2023	2022
License and collaboration revenue	$ 20,116	$ 16,652	$ 44,324	$ 25,084
Operating expenses:				
Research and development	97,608	74,556	197,254	139,966
General and administrative	24,656	24,062	48,146	43,309
Total operating expenses	122,264	98,618	245,400	183,275
Loss from operations	(102,148)	(81,966)	(201,076)	(158,191)
Other income (expense):				
Change in fair value of derivative liabilities	(900)	12,200	4,700	25,800
Change in fair value of non-controlling equity investments	6,148	(4,124)	(6,649)	(11,809)
Change in fair value of contingent consideration liabilities	2,171	(120)	1,875	332
Interest and other income (expense), net	11,953	2,060	21,914	2,704
Total other income (expense)	19,372	10,016	21,840	17,027
Net loss	$ (82,776)	$ (71,950)	$ (179,236)	$ (141,164)
Unrealized gain (loss) on marketable securities	(1,250)	(1,481)	415	(4,140)
Comprehensive loss	$ (84,026)	$ (73,431)	$ (178,821)	$ (145,304)
Net loss per common share, basic and diluted	$ (1.08)	$ (1.02)	$ (2.41)	$ (2.03)
Weighted-average common shares outstanding, basic and diluted	76,335,175	70,210,227	74,315,721	69,461,207

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

Beam Therapeutics Inc.
Condensed Consolidated Statements of Stockholders' Equity
(*Unaudited*)
(in thousands, except share amounts)

	Common Stock		Additional Paid-in Capital	Accumulated Other Comprehensive Income (Loss)	Accumulated Deficit	Total Stockholders' Equity
	Shares	Amount				
Balance at December 31, 2021	68,389,425	$ 684	$ 1,594,378	$ (50)	$ (768,274)	$ 826,738
Purchase of common stock under ESPP	28,990	—	1,412	—	—	1,412
Issuance of common stock from At-the-Market offering, net of issuance costs of $1.3 million	874,770	9	53,927	—	—	53,936
Vesting of restricted common stock	283,186	3	(3)	—	—	—
Stock-based compensation	—	—	18,035	—	—	18,035
Exercise of common stock options	176,652	2	818	—	—	820
Other comprehensive income (loss)	—	—	—	(2,659)	—	(2,659)
Net loss	—	—	—	—	(69,214)	(69,214)
Balance at March 31, 2022	69,753,023	$ 698	$ 1,668,567	$ (2,709)	$ (837,488)	$ 829,068
Issuance of common stock from At-the-Market offering, net of issuance costs of $0.6 million	374,677	4	22,296	—	—	22,300
Vesting of restricted common stock	37,118	—	—	—	—	—
Stock-based compensation	—	—	21,578	—	—	21,578
Exercise of common stock options	147,296	1	645	—	—	646
Other comprehensive income (loss)	—	—	—	(1,481)	—	(1,481)
Net loss	—	—	—	—	(71,950)	(71,950)
Balance at June 30, 2022	70,312,114	$ 703	$ 1,713,086	$ (4,190)	$ (909,438)	$ 800,161

Beam Therapeutics Inc.
Condensed Consolidated Statements of Stockholders' Equity - Continued
(*Unaudited*)
(in thousands, except share amounts)

	Common Stock		Additional Paid-in Capital	Accumulated Other Comprehensive Income (Loss)	Accumulated Deficit	Total Stockholders' Equity
	Shares	Amount				
Balance at December 31, 2022	71,277,339	$ 712	$ 1,792,554	$ (2,430)	$ (1,057,362)	$ 733,474
Purchase of common stock under ESPP	65,620	1	1,707	—	—	1,708
Issuance of common stock from At-the-Market offering, net of issuance costs of $0.2 million	2,431,770	24	93,786	—	—	93,810
Vesting of restricted common stock	284,858	3	(3)	—	—	—
Stock-based compensation	—	—	23,917	—	—	23,917
Exercise of common stock options	375,805	4	3,388	—	—	3,392
Other comprehensive income (loss)	—	—	—	1,665	—	1,665
Net loss	—	—	—	—	(96,460)	(96,460)
Balance at March 31, 2023	74,435,392	$ 744	$ 1,915,349	$ (765)	$ (1,153,822)	$ 761,506
Issuance of common stock from At-the-Market offering, net of issuance costs of $5.1 million	3,387,358	34	107,149	—	—	107,183
Vesting of restricted common stock	63,154	1	(1)	—	—	—
Stock-based compensation	—	—	26,278	—	—	26,278
Exercise of common stock options	67,598	1	701	—	—	702
Other comprehensive income (loss)	—	—	—	(1,250)	—	(1,250)
Net loss	—	—	—	—	(82,776)	(82,776)
Balance at June 30, 2023	77,953,502	$ 780	$ 2,049,476	$ (2,015)	$ (1,236,598)	$ 811,643

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

Beam Therapeutics Inc.
Condensed Consolidated Statements of Cash Flows
(*Unaudited*)
(in thousands)

	Six Months Ended June 30,	
	2023	**2022**
Operating activities		
Net loss	$ (179,236)	$ (141,164)
Adjustments to reconcile net loss to net cash provided by (used in) operating activities:		
Depreciation and amortization	9,463	6,730
Amortization of investment discount (premiums)	(14,505)	(1,091)
Stock-based compensation expense	50,195	39,613
Change in operating lease right-of-use assets	4,829	4,094
Change in fair value of derivative liabilities	(4,700)	(25,800)
Change in fair value of contingent consideration liabilities	(1,875)	(332)
Change in fair value of non-controlling equity investments	6,649	11,809
Other	—	3
Changes in operating assets and liabilities:		
Prepaid expenses and other current assets	(6,476)	(6,957)
Accounts payable	(2,765)	(1,150)
Accrued expenses and other liabilities	(10,154)	(29,314)
Operating lease liabilities	(4,054)	12,345
Collaboration receivable	—	300,000
Deferred revenue	(42,824)	(84)
Other long-term liabilities	969	(2,488)
Net cash provided by (used in) operating activities	(194,484)	166,214
Investing activities		
Purchases of property and equipment	(22,195)	(28,903)
Purchases of marketable securities	(657,359)	(1,020,578)
Maturities of marketable securities	663,525	510,880
Net cash provided by (used in) investing activities	(16,029)	(538,601)
Financing activities		
Proceeds from issuance of common shares, net of commissions	201,623	76,365
Proceeds from issuances of stock under ESPP	1,708	1,412
Payment of equity offering costs	(247)	(109)
Repayment of equipment financings	(1,220)	(1,118)
Proceeds from exercise of stock options	4,094	1,466
Net cash provided by (used in) financing activities	205,958	78,016
Net change in cash, cash equivalents and restricted cash	(4,555)	(294,371)
Cash, cash equivalents and restricted cash—beginning of period	245,521	572,740
Cash, cash equivalents and restricted cash—end of period	$ 240,966	$ 278,369

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

Beam Therapeutics Inc.
Condensed Consolidated Statements of Cash Flows - Continued
(*Unaudited*)
(in thousands)

	Six Months Ended June 30,	
	2023	**2022**
Supplemental disclosure of cash flow information:		
Cash paid for interest	$ 112	$ 214
Supplemental disclosure of noncash investing and financing activities:		
Property and equipment additions in accounts payable and accrued expenses	$ 5,634	$ 8,883
Operating lease liabilities arising from obtaining right-of-use assets	$ 392	$ 35,627
Equity issuance costs in accounts payable and accrued expenses	$ 384	$ 25

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

1. Nature of the business and basis of presentation

Organization

Beam Therapeutics Inc., which we refer to herein as the "Company" or "Beam," is a biotechnology company committed to establishing the leading, fully integrated platform for precision genetic medicines. Beam's vision is to provide life-long cures to patients suffering from genetic diseases. The Company was incorporated on January 25, 2017 as a Delaware corporation and began operations in July 2017. Its principal offices are in Cambridge, Massachusetts.

Liquidity and capital resources

Since its inception, the Company has devoted substantially all of its resources to building its base editing platform and advancing development of its portfolio of programs, establishing and protecting its intellectual property, conducting research and development activities, making arrangements to conduct manufacturing activities with contract manufacturing organizations, research and development costs including preclinical studies, IND-enabling studies and clinical trials, organizing and staffing the Company, maintaining its facilities and new facility build-outs, business planning, raising capital and providing general and administrative support for these operations. The Company is also in the process of developing internal manufacturing capabilities. The Company is subject to risks and uncertainties common to early-stage companies in the biotechnology industry including, but not limited to, technical risks associated with the successful research, development and manufacturing of product candidates, development by competitors of new technological innovations, dependence on key personnel, protection of proprietary technology, compliance with government regulations and the ability to secure additional capital to fund operations. Current and future programs will require significant research and development efforts, including extensive preclinical and clinical testing and regulatory approval prior to commercialization. These efforts require significant amounts of additional capital, adequate personnel and infrastructure. Even if the Company's product development efforts are successful, it is uncertain when, if ever, the Company will realize significant revenue from product sales.

In April 2021, the Company entered into an at the market, or ATM, sales agreement, or the Sales Agreement, with Jefferies LLC, or Jefferies, pursuant to which the Company was entitled to offer and sell, from time to time at prevailing market prices, shares of the Company's common stock having aggregate gross proceeds of up to $300.0 million. The Company agreed to pay Jefferies a commission of up to 3.0% of the aggregate gross sale proceeds of any shares sold by Jefferies under the Sales Agreement. Between April and July 2021, the Company sold 2,908,009 shares of its common stock under the Sales Agreement at an average price of $103.16 per share for aggregate gross proceeds of $300.0 million, before deducting commissions and offering expenses payable by the Company.

In July 2021 and May 2023, the Company and Jefferies entered into amendments to the Sales Agreement to provide for increases in the aggregate offering amount under the Sales Agreement, such that as of May 10, 2023, the Company may offer and sell shares of common stock having an aggregate offering price of up to an additional $800.0 million. As of June 30, 2023, the Company has sold 9,727,417 additional shares of its common stock under the amended Sales Agreement at an average price of $54.30 per share for aggregate gross proceeds of $528.2 million, before deducting commissions and offering expenses payable by the Company.

Since its inception, the Company has incurred substantial losses and had an accumulated deficit of $1.2 billion as of June 30, 2023. The Company expects to generate operating losses and negative operating cash flows for the foreseeable future.

The Company expects that its cash, cash equivalents, and marketable securities as of June 30, 2023 of $1.1 billion will be sufficient to fund its operations for at least the next 12 months from the date of issuance of these financial statements. The Company will need additional financing to support its continuing operations and pursue its growth strategy. Until such time as the Company can generate significant revenue from product sales, if ever, it expects to finance its operations through a combination of equity offerings, debt financings, collaborations, strategic alliances and licensing arrangements. The Company may be unable to raise additional funds or enter into such other agreements when needed on favorable terms or at all. The inability to raise capital as and when needed would have a negative impact on the Company's financial condition and its ability to pursue its business strategy. The Company will need to generate significant revenue to achieve profitability, and it may never do so.

2. Summary of significant accounting policies

The Company's significant accounting policies are disclosed in the audited consolidated financial statements for the year ended December 31, 2022, and notes thereto, which are included in the Company's Annual Report on Form 10-K that was filed with the Securities and Exchange Commission, or the SEC, on February 28, 2023, or the 2022 Form 10-K. Since the date of those financial statements, there have been no material changes to Beam's significant accounting policies.

Basis of presentation

The accompanying condensed consolidated financial statements have been prepared in accordance with United States generally accepted accounting principles, or GAAP. Any reference in these notes to applicable guidance is meant to refer to the authoritative GAAP as found in the Accounting Standards Codification, or ASC, and Accounting Standards Update, or ASU, of the Financial Accounting Standards Board.

Principles of consolidation

The accompanying condensed consolidated financial statements include the results of operations of the Company and its wholly-owned subsidiaries. All intercompany transactions and balances have been eliminated in consolidation.

Use of estimates

The preparation of financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the reported amounts of assets, liabilities, revenues and expenses, and the disclosure of contingent assets and liabilities as of and during the reporting period. The Company bases its estimates and assumptions on historical experience when available and on various factors that it believes to be reasonable under the circumstances. Significant estimates and assumptions reflected in these condensed consolidated financial statements include, but are not limited to, incremental borrowing rate used in the calculation of lease liabilities, research and development expenses, stock-based compensation, contingent consideration liabilities, success payments and certain judgments regarding revenue recognition. Actual results could differ from these estimates.

Cash, cash equivalents, and restricted cash

Cash and cash equivalents consist of standard checking accounts, money market accounts, and all highly liquid investments with a remaining maturity of three months or less at the date of purchase. Restricted cash represents collateral provided for letters of credit issued as security deposits in connection with the Company's leases of its corporate and manufacturing facilities.

The following table reconciles cash, cash equivalents, and restricted cash reported within the Company's condensed consolidated balance sheets to the total of the amounts shown in the condensed consolidated statements of cash flows (in thousands):

	June 30, 2023	June 30, 2022
Cash and cash equivalents	$ 225,544	$ 265,623
Restricted cash	15,422	12,746
Total cash, cash equivalents, and restricted cash	$ 240,966	$ 278,369

3. Property and equipment, net

Property and equipment consist of the following (in thousands):

	June 30, 2023	December 31, 2022
Leasehold improvements	$ 87,795	$ 85,804
Lab equipment	54,553	47,383
Furniture and fixtures	4,604	4,332
Computer equipment	3,084	3,073
Construction in process	17,800	5,198
Total property and equipment	167,836	145,790
Less accumulated depreciation	(39,633)	(30,170)
Property and equipment, net	$ 128,203	$ 115,620

The following table summarizes depreciation expense incurred (in thousands):

	Three Months Ended June 30,		Six Months Ended June 30,	
	2023	2022	2023	2022
Depreciation expense	$ 4,816	$ 3,418	$ 9,463	$ 6,680

4. Fair value of financial instruments

The Company's financial instruments that are measured at fair value on a recurring basis consist of cash equivalents, marketable securities, corporate equity securities of Verve Therapeutics, Inc., or Verve, and Prime Medicine, Inc., or Prime, contingent consideration liabilities related to the agreement and plan of merger pursuant to which the Company acquired Guide, or the Guide Merger Agreement, and success payment derivative liabilities pursuant to the license agreement, or the Harvard License Agreement,

between President and Fellows of Harvard University, or Harvard, and the Company, and the license agreement, or the Broad License Agreement, between The Broad Institute, Inc., or Broad Institute, and the Company.

The following tables set forth the fair value of the Company's financial assets and liabilities by level within the fair value hierarchy at June 30, 2023 (in thousands):

	Carrying amount	Fair value	Level 1	Level 2	Level 3
Assets					
Cash equivalents:					
Money market funds	$ 157,084	$ 157,084	$ 157,084	$ —	$ —
Marketable securities:					
Commercial paper	436,086	436,086	—	436,086	—
U.S. Treasury securities	95,407	95,407	—	95,407	—
U.S. Government securities	282,161	282,161	—	282,161	—
Corporate equity securities	33,818	33,818	33,818	—	—
Total assets	$ 1,004,556	$ 1,004,556	$ 190,902	$ 813,654	$ —
Liabilities					
Success payment liability – Harvard	$ 6,700	$ 6,700	$ —	$ —	$ 6,700
Success payment liability – Broad Institute	6,900	6,900	—	—	6,900
Contingent consideration liability – Technology	3,838	3,838	—	—	3,838
Contingent consideration liability – Product	6,750	6,750	—	—	6,750
Total liabilities	$ 24,188	$ 24,188	$ —	$ —	$ 24,188

The following tables set forth the fair value of the Company's financial assets and liabilities by level within the fair value hierarchy at December 31, 2022 (in thousands):

	Carrying amount	Fair value	Level 1	Level 2	Level 3
Assets					
Cash equivalents:					
Money market funds	$ 218,794	$ 218,794	$ 218,794	$ —	$ —
Commercial paper	10,475	10,475	—	10,475	—
Corporate notes	3,498	3,498	—	3,498	—
Marketable securities:					
Commercial paper	577,728	577,728	—	577,728	—
Corporate notes	18,996	18,996	—	18,996	—
U.S. Treasury securities	145,312	145,312	—	145,312	—
U.S. Government securities	62,864	62,864	—	62,864	—
Equity securities included in marketable securities:					
Corporate equity securities	40,467	40,467	40,467	—	—
Total assets	$ 1,078,134	$ 1,078,134	$ 259,261	$ 818,873	$ —
Liabilities					
Success payment liability – Harvard	$ 9,000	$ 9,000	$ —	$ —	$ 9,000
Success payment liability – Broad Institute	9,300	9,300	—	—	9,300
Contingent consideration liability – Technology	6,025	6,025	—	—	6,025
Contingent consideration liability – Product	6,438	6,438	—	—	6,438
Total liabilities	$ 30,763	$ 30,763	$ —	$ —	$ 30,763

Cash equivalents – Money market funds included within cash equivalents are classified within Level 1 of the fair value hierarchy because they are valued using quoted market prices in active markets. Commercial paper and corporate notes are classified within Level 2 of the fair value hierarchy because pricing inputs are other than quoted prices in active markets, which are either directly or indirectly observable as of the reporting date, and fair value is determined through the use of models or other valuation methodologies.

Marketable securities – Marketable securities, excluding corporate equity securities, are classified within Level 2 of the fair value hierarchy because pricing inputs are other than quoted prices in active markets, which are either directly or indirectly observable as of the reporting date, and fair value is determined using models or other valuation methodologies.

The Company holds an investment in Verve consisting of shares of Verve's common stock. As of June 30, 2023, the Company owned 546,970 shares of Verve's common stock valued at $10.3 million, which is included in marketable securities in the condensed consolidated balance sheet.

The Company also holds an investment in Prime consisting of 1,608,337 shares of Prime's common stock. As of June 30, 2023, the Company's investment in Prime's common stock was valued at $23.6 million, which is included in marketable securities in the condensed consolidated balance sheet.

Pursuant to ASC 825, *Financial instruments*, the Company records changes in the fair value of its investments in equity securities to other income (expense), in the Company's condensed consolidated statements of operations.

The following table summarizes other income (expense) recorded due to changes in the fair value of corporate equity securities held (in thousands):

	Three Months Ended June 30,		Six Months Ended June 30,	
	2023	2022	2023	2022
Other income (expense)	$ 6,148	$ (4,124)	$ (6,649)	$ (11,809)

Success payment liabilities – As discussed further in Note 8, *License agreements*, the Company is required to make payments to Harvard and Broad Institute based upon the achievement of specified multiples of the market value of the Company's common stock, at specified valuation dates. The Company's liability for the share-based success payments under the Harvard and Broad License Agreements is carried at fair value. To determine the estimated fair value of the success payment liability, the Company uses a Monte Carlo simulation methodology, which models the future movement of stock prices based on several key variables.

The following variables were incorporated in the calculation of the estimated fair value of the Harvard and Broad Institute success payment liabilities:

	Harvard		Broad Institute	
	June 30, 2023	December 31, 2022	June 30, 2023	December 31, 2022
Fair value of common stock (per share)	$ 31.93	$ 39.11	$ 31.93	$ 39.11
Expected volatility	80 %	82 %	79 %	82 %
Expected term (years)	0.08-6.00	0.08-6.49	0.08-6.86	0.08-7.36

The computation of expected volatility was estimated using available information about the historical volatility of stocks of similar publicly traded companies in addition to the Company's own data for a period matching the expected term assumption. In addition, the Company incorporated the estimated number, timing, and probability of valuation measurement dates in the calculation of the success payment liability.

The following table reconciles the change in the fair value of success payment liabilities based on Level 3 inputs (in thousands):

	Six Months Ended June 30, 2023		
	Harvard	Broad Institute	Total
Balance at December 31, 2022	$ 9,000	$ 9,300	$ 18,300
Change in fair value	(2,300)	(2,400)	(4,700)
Balance at June 30, 2023	$ 6,700	$ 6,900	$ 13,600

Contingent consideration liabilities – Under the Guide Merger Agreement, Guide's former stockholders and option holders are eligible to receive up to an additional $100.0 million in technology milestone payments and $220.0 million in product milestone payments, payable in the Company's common stock valued using the volume-weighted average price of the Company's stock over the ten-day trading period ending two trading days prior to the date on which the applicable milestone is achieved. As these milestones are payable in the Company's common stock, the milestone payments result in liability classification under ASC 480, *Distinguishing Liabilities from Equity*. These contingent consideration liabilities are carried at fair value which was estimated by applying a probability-based model, which utilized inputs based on timing of achievement that were unobservable in the market. Changes in fair value are reflected in the Company's condensed consolidated statements of operations and other comprehensive loss, presented in other income (expense). These contingent consideration liabilities are classified within Level 3 of the fair value hierarchy.

The following table reconciles the change in fair value of the contingent consideration liabilities based on level 3 inputs (in thousands):

	Six Months Ended June 30, 2023		
	Technology Milestones	Product Milestones	Total
Balance at December 31, 2022	$ 6,025	$ 6,438	$ 12,463
Change in fair value	(2,187)	312	(1,875)
Balance at June 30, 2023	$ 3,838	$ 6,750	$ 10,588

The following variables were incorporated in the calculation of the estimated fair value of the contingent consideration liabilities:

	Technology Milestones		Product Milestones	
	June 30, 2023	December 31, 2022	June 30, 2023	December 31, 2022
Discount Rate	10.00 %	10.00 %	10.00 %	10.00 %
Probability of Achievement	0-15%	5-15%	2-15%	2-15%
Projected Year of Achievement	2024-2025	2024-2025	2025-2030	2025-2030

5. Marketable securities

The following table summarizes the Company's marketable securities held at June 30, 2023 (in thousands):

	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value
Commercial paper	$ 436,569	$ 18	$ (501)	$ 436,086
U.S. Treasury securities	95,702	1	(296)	95,407
U.S. Government securities	283,398	—	(1,237)	282,161
Corporate equity securities	33,818	—	—	33,818
Total	$ 849,487	$ 19	$ (2,034)	$ 847,472

The following table summarizes the Company's marketable securities held at December 31, 2022 (in thousands):

	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value
Commercial paper	$ 578,813	$ 72	$ (1,157)	$ 577,728
Corporate notes	19,033	—	(37)	18,996
U.S. Treasury securities	146,270	—	(958)	145,312
U.S. Government securities	63,214	13	(363)	62,864
Corporate equity securities	40,467	—	—	40,467
Total	$ 847,797	$ 85	$ (2,515)	$ 845,367

The amortized cost of marketable securities is adjusted for amortization of premiums and accretion of discounts to maturity. At June 30, 2023, the balance in accumulated other comprehensive (loss) income was related to marketable securities. There were no realized gains or losses recognized on the sale or maturity of marketable securities for the six months ended June 30, 2023 and 2022 and, as a result, the Company did not reclassify any amounts out of accumulated other comprehensive (loss) income for the same periods.

The Company holds debt securities of companies with high credit quality and has determined that there was no material change in the credit risk of any of its debt securities.

6. Accrued expenses and other current liabilities

Accrued expenses and other current liabilities consist of the following (in thousands):

	June 30, 2023	December 31, 2022
Employee compensation and related benefits	$ 9,928	19,122
Research costs	9,237	4,844
Professional fees	7,251	6,751
Process development and manufacturing costs	3,581	5,080
Other	7,522	12,262
Total	$ 37,519	$ 48,059

The Company received correspondence from a research institution regarding a confidentiality agreement between such institution and the Company. The confidentiality agreement related to certain technology that the Company evaluated for development in connection with certain of its programs. The correspondence alleges that the Company breached the terms of the confidentiality agreement, misappropriated trade secret and other confidential information of such institution, engaged in unfair and deceptive trade practices, and was unjustly enriched in connection with developing its therapeutics, including BEAM-102 and BEAM-302. The research institution claims that it is entitled to monetary damages (including damages for the apportioned value of the Company and enhanced damages for an alleged willful violation) and certain ongoing royalty and/or milestone payments related to the technology that is the subject of the alleged breaches of contract, among other possible remedies.

As of June 30, 2023, the Company has accrued a $3.4 million liability equal to an amount the Company offered to resolve the dispute. The settlement proposal was rejected by the research institution. No complaint has been filed, and the Company continues to discuss the matter with the research institution. Although it may do so, the Company has not determined to make a further offer and believes that it is unable at this time to provide any estimate of a reasonably possible loss in excess of the amount offered. The ultimate resolution of this matter could result in an outcome that is materially different from the amount accrued as of June 30, 2023.

7. License agreements

Harvard license agreement

Under the Harvard License Agreement, Harvard is entitled to receive success payments, in cash or shares of Company stock, determined based upon the achievement of specified multiples of the initial weighted average value of the Company's Series A Preferred at specified valuation dates. The success payments range from $5.0 million to a maximum of $105.0 million and have valuation multiples that range from 5 times to 40 times the initial weighted average value of the Series A Preferred. Subsequent to the Company's February 2020 IPO, the amount of success payments is based on the market value of the Company's common stock.

The Company is required to make success payments to Harvard during a period of time, or the Harvard Success Payment Period, which has been determined to be the later of (1) the ninth anniversary of the Harvard License Agreement or (2) the earlier of (a) the twelfth anniversary of the Harvard License Agreement and (b) the third anniversary of the first date on which a licensed product receives regulatory approval in the United States. During the Harvard Success Payment Period and beginning one year after the Company's IPO, the Company will perform a calculation of any amounts owed to Harvard on each rolling 90-day period.

In May 2021, the first success payment measurement occurred and amounts due to Harvard were calculated to be $15.0 million. The Company elected to make the payment in shares of the Company's common stock and issued 174,825 shares of the Company's common stock to settle this liability on June 10, 2021. The Company may owe Harvard success payments of up to an additional $90.0 million. As of June 30, 2023, no success payments were due to Harvard.

The following table summarizes the Company's success payment liability for Harvard (in thousands):

	June 30, 2023	December 31, 2022
Harvard success payment liability	$ 6,700	$ 9,000

The following table summarizes the expense resulting from the change in the fair value of the success payment liability for Harvard (in thousands):

	Three Months Ended June 30,		Six Months Ended June 30,	
	2023	2022	2023	2022
Change in fair value of Harvard success payment liability	$ 500	$ (6,100)	$ (2,300)	$ (12,900)

As of each of June 30, 2023 and 2022, the Company determined that product development and regulatory approval milestones under the Harvard License Agreement were not probable and, as such, no amounts were recognized for the three and six months ended June 30, 2023 or 2022.

During the three and six months ended June 30, 2023 the Company did not incur expense related to non-royalty sublicense fees owed to Harvard. The Company incurred $2.1 million and $2.7 million of expense related to non-royalty sublicense fees owed to Harvard during the three and six months ended June 30, 2022, respectively.

Broad license agreement

Under the Broad License Agreement, Broad Institute is entitled to receive success payments, in cash or shares of Company common stock, determined based upon the achievement of specified multiples of the initial weighted average value of the Series A Preferred at specified valuation dates. The success payments range from $5.0 million to a maximum of $105.0 million and have valuation multiples that range from 5 times to 40 times the initial weighted average value of the Series A Preferred. Subsequent to the February 2020 IPO, the amount of success payments is based on the market value of the Company's common stock.

The Company is required to make success payments to Broad Institute during a period of time, or the Broad Success Payment Period, which has been determined to be the earliest of (1) the twelfth anniversary of the Broad License Agreement or (2) the third anniversary of the first date on which a licensed product receives regulatory approval in the United States. During the Broad Success Payment Period, the Company will perform a calculation of any amounts owed to Broad Institute on each rolling 90-day period, commencing one year after the Company's IPO.

In May 2021, the first success payment measurement occurred and amounts due to Broad Institute were calculated to be $15.0 million. The Company elected to make the payment in shares of the Company's common stock and issued 174,825 shares of the Company's common stock to settle this liability on June 10, 2021. The Company may owe Broad Institute success payments of up to an additional $90.0 million. As of June 30, 2023, no success payments were due to Broad Institute.

The following table summarizes the Company's success payment liability for Broad Institute (in thousands):

	June 30, 2023	December 31, 2022
Broad Institute success payment liability	$ 6,900	$ 9,300

The following table summarizes the expense resulting from the change in the fair value of the success payment liability for Broad Institute (in thousands):

	Three Months Ended June 30,		Six Months Ended June 30,	
	2023	2022	2023	2022
Change in fair value of Broad Institute success payment liability	$ 400	$ (6,100)	$ (2,400)	$ (12,900)

During the three and six months ended June 30, 2023, the Company recognized $0.2 and $0.3 million of expense related to product development and regulatory approval milestones and royalties under the Broad License Agreement, respectively. There was no expense related to the product development and regulatory approval milestones and royalties recognized during the six months ended June 30, 2022.

The Company recorded $0.1 million and $0.2 million of expense related to non-royalty sublicense fees owed to the Broad Institute during the three and six months ended June 30, 2023, respectively. The Company recorded no expense related to non-royalty sublicense fees owed to the Broad Institute during the six months ended June 30, 2022.

Editas license agreement

In May 2018, the Company entered into a license agreement, or the Editas License Agreement, with Editas Medicine, Inc., or Editas. Pursuant to the Editas License Agreement, Editas granted to the Company licenses and options to acquire licenses to certain intellectual property rights owned or controlled by Editas, for specified uses.

The annual maintenance fees under the Editas License Agreement are recorded as research and development expense. Annual patent costs are expensed as incurred. In addition, the Company is required to make certain development, regulatory and commercial milestone payments to Editas upon the achievement of specified milestones.

8. Collaboration and license agreements

Orbital

In September 2022, the Company entered into a License and Research Collaboration Agreement, or the Orbital Agreement, with Orbital Therapeutics, Inc., or Orbital. Under the terms of the Orbital Agreement, the Company will collaborate with Orbital to advance nonviral delivery and ribonucleic acid, or RNA, technology by providing Orbital with certain proprietary materials, a non-exclusive research license to certain RNA technology and nonviral delivery technology controlled by the Company, and by performing research and development support services as outlined in a research plan. The Company also granted Orbital an exploitation license to certain RNA technology and nonviral delivery technology controlled by the Company. The exploitation license is exclusive in the fields of vaccines and certain protein therapeutics and nonexclusive in all other fields other than gene editing and conditioning. The collaboration is managed on an overall basis by a Joint Steering Committee, or JSC, comprised of an equal number of representatives from the Company and Orbital.

In exchange for the licenses and services provided by the Company under the Orbital Agreement, the Company received a non-exclusive research license to certain RNA technology and nonviral delivery technology controlled by Orbital, and research and development support services as outlined in a research plan. Orbital also granted Beam an exploitation license to certain RNA technology and nonviral delivery technology controlled by Orbital. The exploitation license is exclusive in the fields of gene editing and conditioning and nonexclusive in all other fields other than vaccines and certain protein therapeutics. The Company also received 75 million shares of Orbital’s common stock at closing, which represented a 31.5% fully diluted equity interest in Orbital as of the closing (which considers the capital structure of Orbital and its preferred stock, restricted common stock and options). The Company accounts for its investment in Orbital under the equity method of accounting.

The research plan has a term of three years and can be extended for unspecified periods upon mutual agreement between the Company and Orbital. The exploitation licenses are exclusive for an initial research term of three years, which may be extended for up to two successive one-year periods by mutual agreement between the Company and Orbital. Either party may terminate the licenses granted to it under the Orbital Agreement for convenience on a product-by-product basis at any time by providing 90 days’ prior written notice.

The Company accounts for the Orbital Agreement under ASC 606, *Revenue from Contracts with Customers*, or ASC 606, as it includes a customer-vendor relationship as defined under ASC 606 and meets the criteria to be considered a contract.

The overall transaction price as of the inception of the contract was determined to be $25.5 million, which represents the fair value of the Company's equity interest in Orbital's common stock at inception. There is no variable consideration included in the transaction price at inception.

The Company concluded that the research and exploitation licenses are not distinct from the other promises in the Orbital Agreement, and as such the Company has determined that the licenses combined with the research and development services, know-how transfers, committee participation and materials transfer represent a performance obligation. The Company recognizes revenue associated with the Orbital performance obligation over time as it is satisfied during the term of the agreement, which is three years. The Company recognized $2.1 million and $4.2 million of revenue during the three and six months ended June 30, 2023, respectively. As of June 30, 2023, there was $8.5 million and $10.6 million of current and long-term deferred revenue, respectively, related to the Orbital Agreement.

Pfizer

In December 2021, the Company entered into a research collaboration agreement, or the Pfizer Agreement, with Pfizer Inc., or Pfizer, focused on the use of certain of the Company's base editing technology to develop in vivo therapies for rare genetic diseases of the liver, muscle, and central nervous system. Under the terms of the Pfizer Agreement, the Company will conduct all research activities through development candidate selection for three base editing programs that target specific genes corresponding to specific diseases that are the subject of such programs. Pfizer will have exclusive rights to license each of the three programs at no additional cost, each an Opt-In Right, and will assume responsibility for subsequent development and commercialization. At the end of the Phase 1/2 clinical trials, the Company may elect to enter into a global co-development and co-commercialization agreement with Pfizer with respect to one program licensed under the collaboration for an option exercise fee equal to a percentage of the applicable development costs incurred by Pfizer, or the Participation Election. In the event the Company elects to exercise its Participation Election, upon the payment of its option exercise fee, Pfizer and the Company would share net profits as well as development and commercialization costs in a 65%/35% (Pfizer/Company) split for such program. The research collaboration is managed on an overall basis by a Joint Research Committee, or JRC, formed by an equal number of representatives from the Company and Pfizer.

At the inception of the Pfizer Agreement, the Company was entitled to receive a nonrefundable upfront payment of $300.0 million in consideration for the rights granted to Pfizer under the collaboration. Should Pfizer exercise its Opt-In Right for any of the three programs, the Company would be eligible to receive development, regulatory, and commercial milestones of up to $350.0 million per program, for potential total consideration of up to $1.35 billion, plus royalty payments on global net sales for each licensed program, if any. If Pfizer does not exercise its Opt-In Right for a program, the Company's rights in such program revert to the Company and the Company will be required to pay Pfizer earn-out payments equal to a low single digit percentage of net sales earned on such program for a ten-year period, if any. As the $300.0 million upfront fee was not received by the Company as of December 31, 2021, the Company recorded a collaboration receivable for $300.0 million with a corresponding deferred revenue liability. The Company received the $300.0 million upfront payment in January 2022.

During the collaboration term, Pfizer has a one-time option to substitute a disease that is the subject of a specific program with one pre-defined substitute disease. The collaboration has an initial term of four years and may be extended for an additional year on a program-by-program basis. Pfizer may terminate the Pfizer Agreement for convenience on any or all of the programs by providing 90 days' prior written notice.

The Company accounts for the Pfizer Agreement under ASC 606, as it includes a customer-vendor relationship as defined under ASC 606 and meets the criteria to be considered a contract.

The overall transaction price as of the inception of the contract was determined to be $300.0 million, which is comprised entirely of the nonrefundable upfront payment. There is no variable consideration included in the transaction price at inception as the future milestone payments are fully constrained and the Company is not required to estimate variable consideration for the royalty payments at contract inception. The Company will re-evaluate the transaction price in each reporting period.

The Company has concluded that the licenses to its base editing technology, including the exclusive development and commercialization rights, are not capable of being distinct from the other performance obligations, and as such the Company has determined that the licenses combined with the other research and development services represent performance obligations and no up-front revenue was recognized for the licenses.

The selling price of each performance obligation was determined based on the Company's estimated standalone selling price, or the ESSP. The Company developed the ESSP for all of the performance obligations included in the Pfizer Agreement by determining the total estimated costs to fulfill each performance obligation identified with the objective of determining the price at which it would sell such an item if it were to be sold regularly on a standalone basis. The Company allocated the stand-alone selling price to the performance obligations based on the relative standalone selling price method.

The Company recognizes revenue for each performance obligation as it is satisfied during the term of the agreement using an input method. The Company allocated the transaction price of $300.0 million to each of the three performance obligations, which includes each of the three base editing programs combined with the research and development services, licenses, and exclusive development and commercialization rights. Revenue is recognized using an input method based on the actual costs incurred as a percentage of total budgeted costs towards satisfying the performance obligation as this method provides the most faithful depiction of the entity's performance in transferring control of the goods and services promised to Pfizer and represents the Company's best estimate of the period of the obligation. For the three and six months ended June 30, 2023, the Company recognized $10.1 million and $26.3 million of revenue related to the Pfizer Agreement, respectively. For the three and six months ended June 30, 2022, the Company recognized $14.3 million and $20.6 million of revenue related to the Pfizer Agreement, respectively. As of June 30, 2023, there was $101.9 million and $123.6 million of current and long-term deferred revenue, respectively, related to the Pfizer Agreement.

Apellis Pharmaceuticals

In June 2021, the Company entered into a research collaboration agreement, or the Apellis Agreement, with Apellis Pharmaceuticals, Inc., or Apellis, focused on the use of certain of the Company's base editing technology to discover new treatments for complement system-driven diseases. Under the terms of the Apellis Agreement, the Company will conduct preclinical research on six base editing programs that target specific genes within the complement system in various organs, including the eye, liver, and brain. Apellis has an exclusive option to license any or all of the six programs, or in each case, an Opt-In Right, and will assume responsibility for subsequent development. The Company may elect to enter into a 50-50 U.S. co-development and co-commercialization agreement with Apellis with respect to one program instead of a license. The collaboration is managed on an overall basis by an alliance steering committee formed by an equal number of representatives from the Company and Apellis.

As part of the collaboration, the Company was eligible to receive a total of $75.0 million in upfront and near-term milestones from Apellis, which was comprised of $50.0 million received upon signing and an additional $25.0 million payment on June 30, 2022, the one-year anniversary of the effective date of the Apellis Agreement, or the First Anniversary Payment. Following any exercise of an Opt-In Right for any of the six programs, the Company will be eligible to receive development, regulatory, and sales milestones from Apellis, as well as royalty payments on sales. The collaboration has an initial term of five years and may be extended up to two years on a per year and program-by-program basis. During the collaboration term, Apellis may, subject to certain limitations, substitute a specific complement gene and/or organ for any of the initial base editing programs. Apellis may terminate the Apellis Agreement for convenience on any or all of the programs by providing prior written notice.

The Company accounts for the Apellis Agreement under ASC 606 as it includes a customer-vendor relationship as defined under ASC 606 and meets the criteria to be considered a contract.

The overall transaction price as of the inception of the contract was determined to be $75.0 million, which is composed of the upfront payment of $50.0 million and the First Anniversary Payment of $25.0 million. The Company will re-evaluate the transaction price in each reporting period.

The Company concluded that each of the six base editing programs combined with the research and development service, licenses, substitution rights and governance participation were material promises that were both capable of being distinct and were distinct within the context of the Apellis Agreement and represented separate performance obligations. The Company further concluded that the Opt-In Rights and option to extend the collaboration term did not grant Apellis a material right. The Company determined that the term of the contract is five years, as this is the period during which both parties have enforceable rights.

The selling price of each performance obligation was determined based on the Company's ESSP. The Company developed the ESSP for all of the performance obligations included in the Apellis Agreement by determining the total estimated costs to fulfill each performance obligation identified with the objective of determining the price at which it would sell such an item if it were to be sold regularly on a standalone basis. The Company allocated the stand-alone selling price to the performance obligations based on the relative standalone selling price method.

The Company recognizes revenue for each performance obligation as it is satisfied over the five-year term using an input method. The Company allocated the transaction price of $75.0 million to each of the six performance obligations, which includes each of the six base editing programs combined with the research and development service, licenses, substitution rights and governance participation, and is being recognized using an input method based on the actual costs incurred as a percentage of total budgeted costs towards satisfying the performance obligation as this method provides the most faithful depiction of the entity's performance in transferring control of the goods and services promised to Apellis and represents the Company's best estimate of the period of the obligation. For the three and six months ended June 30, 2023, the Company recognized $6.9 million and $12.2 million of revenue related to the Apellis Agreement, respectively. During the three and six months ended June 30, 2022, the Company recognized $2.4 million and $4.5 million of revenue related to the Apellis Agreement, respectively. As of June 30, 2023, there is $28.8 million and $21.6 million of current and long-term deferred revenue, respectively, related to the Apellis Agreement.

Verve

In April 2019, the Company entered into a collaboration and license agreement with Verve, or the Verve Agreement, to investigate gene editing strategies to modify genes associated with an increased risk of coronary diseases and in July 2022, the Company and Verve amended the Verve Agreement. Under the terms of the Verve Agreement, as amended, the Company granted Verve an exclusive license to certain base editor technology and improvements and Verve granted Beam a non-exclusive license under certain know-how and patents controlled by Verve, an interest in joint collaboration technology and a non-exclusive license under certain delivery technology.

As of June 30, 2023, the Company determined that milestones and royalties under the Verve Agreement were not probable of recognition.

9. Common stock

In April 2021, the Company entered into the Sales Agreement with Jefferies, pursuant to which the Company was entitled to offer and sell, from time to time at prevailing market prices, shares of the Company's common stock having aggregate gross proceeds of up to $300.0 million. The Company agreed to pay Jefferies a commission of up to 3.0% of the aggregate gross sale proceeds of any shares sold by Jefferies under the Sales Agreement. Between April and July 2021, the Company has sold 2,908,009 shares of its common stock under the Sales Agreement at an average price of $103.16 per share for aggregate gross proceeds of $300.0 million, before deducting commissions and offering expenses payable by the Company.

In July 2021 and May 2023, the Company and Jefferies entered into amendments to the Sales Agreement to provide for increases in the aggregate offering amount under the Sales Agreement, such that as of May 10, 2023, the Company may offer and sell shares of common stock having an aggregate offering price of up to an additional $800.0 million. As of June 30, 2023, the Company has sold 9,727,417 additional shares of its common stock under the amended Sales Agreement at an average price of $54.30 per share for aggregate gross proceeds of $528.2 million, before deducting commissions and offering expenses payable by the Company.

The holders of the Company's common stock are entitled to one vote for each share of common stock. Subject to the payment in full of all preferential dividends to which the holders of the Company's preferred stock are entitled, the holders of the Company's common stock shall be entitled to receive ratably dividends out of funds legally available. In the event of any voluntary or involuntary liquidation, dissolution, or winding up of the Company, after the payment or provision for payment of all debts and liabilities of the Company and all preferential amounts to which the holders of Company's preferred stock are entitled with respect to the distribution of assets in liquidation, the holders of common stock shall be entitled to share ratably in the remaining assets of the Company available for distribution.

10. Stock option and grant plan

2019 equity incentive plan

As of June 30, 2023, the Company had 12,853,887 shares reserved including 1,827,733 shares available for future issuance pursuant to the Beam Therapeutics Inc. 2019 Equity Incentive Plan.

Stock-based compensation expense recorded as research and development and general and administrative expenses in the condensed consolidated statements of operations and other comprehensive loss is as follows (in thousands):

	Three Months Ended June 30,		Six Months Ended June 30,	
	2023	2022	2023	2022
Research and development	$ 15,521	$ 13,428	$ 29,743	$ 24,722
General and administrative	10,757	8,150	20,452	14,891
Total stock-based compensation expense	$ 26,278	$ 21,578	$ 50,195	$ 39,613

Stock options

The following table provides a summary of option activity under the Company's equity award plans:

	Number of options	Weighted average exercise price
Outstanding at December 31, 2022	7,548,392	$ 41.77
Granted	2,033,642	41.69
Exercised	(443,403)	9.23
Forfeitures	(305,655)	61.47
Outstanding at June 30, 2023	8,832,976	42.70
Exercisable as of June 30, 2023	4,360,639	$ 33.16

The weighted-average grant date fair value per share of options granted in the six months ended June 30, 2023 was $29.21. As of June 30, 2023, there was $152.5 million of unrecognized compensation expense related to unvested stock options, which is expected to be recognized over a weighted-average remaining vesting period of approximately 2.5 years.

Restricted stock

The Company issues shares of restricted common stock, including both restricted stock units and restricted stock awards. Restricted common stock issued generally vests over a period of two to four years.

The following table summarizes the Company's restricted stock activity:

	Shares	Weighted-average grant date fair value
Unvested as of December 31, 2022	1,692,819	$ 65.49
Issued	956,075	30.73
Vested	(348,012)	67.74
Forfeited	(107,704)	58.85
Unvested as of June 30, 2023	2,193,178	$ 50.31

At June 30, 2023, there was approximately $98.8 million of unrecognized stock-based compensation expense related to restricted stock that is expected to vest. These costs are expected to be recognized over a weighted-average remaining vesting period of approximately 3.1 years.

2019 employee stock purchase plan

The Company issued 65,620 and 28,990 shares under the Beam Therapeutics Inc. 2019 Employee Stock Purchase Plan, or ESPP, during the six months ended June 30, 2023 and 2022, respectively. As of June 30, 2023, the Company had 2,312,352 shares available for issuance under the ESPP.

Stock-based compensation recognized under the ESPP for the three and six months ended June 30, 2023 was $0.3 million and $0.8 million, respectively. The Company recognized stock-based compensation under the ESPP of $0.5 million and $0.8 million for three and six months ended June 30, 2022, respectively.

11. Net loss per share

For periods in which the Company reports a net loss, potentially dilutive securities have been excluded from the computation of diluted net loss per share as their effects would be anti-dilutive. Therefore, the weighted average number of shares of common stock outstanding used to calculate both basic and diluted net loss per share is the same. The Company excluded the following potential shares of common stock, presented based on amounts outstanding at period end, from the computation of diluted net loss per share because including them would have had an anti-dilutive effect:

	As of June 30,	
	2023	2022
Unvested restricted stock	2,193,178	1,640,676
Outstanding options to purchase common stock	8,832,976	7,388,993
ESPP	64,080	46,712
Total	11,090,234	9,076,381

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

	Three Months Ended June 30,		Six Months Ended June 30,	
	2023	2022	2023	2022
Numerator:				
Net loss	$ (82,776)	$ (71,950)	$ (179,236)	$ (141,164)
Denominator:				
Weighted average shares of common stock outstanding, basic and diluted	76,335,175	70,210,227	74,315,721	69,461,207
Net loss per share of common stock, basic and diluted	$ (1.08)	$ (1.02)	$ (2.41)	$ (2.03)

12. Income taxes

During the three and six months ended June 30, 2023 and 2022, the Company recorded a full valuation allowance on federal and state deferred tax assets since there is insufficient evidence that the deferred tax assets are more likely than not realizable. The Company did not have any tax provision or benefit in the three or six months ended June 30, 2023 and 2022.

13. Related party transactions

Orbital

The Company has significant influence over, but does not control, Orbital through its noncontrolling representation on Orbital's board of directors and the Company’s equity interest in Orbital. The Company and Orbital are also parties to a collaboration and license agreement and have multiple common board members.

Founders

The Company made payments of $0.2 million to its three founder shareholders for scientific consulting and other expenses for each of the six months ended June 30, 2023 and 2022.

Verve

The Company and Verve are parties to a collaboration and license agreement and had a common board member from August 2018 to August 2022.

As of June 30, 2023, the Company owns 546,970 shares of Verve's common stock, the value of which is included in marketable securities in the condensed consolidated balance sheet. The Company recorded the investment at fair value as of June 30, 2023, which resulted in a recognition of other income of $2.4 million for the three months ended June 30, 2023 and $0.3 million of other expense for the six months ended June 30, 2023. The Company recorded other expense of $4.1 million and $11.8 million for the three months and six months ended June 30, 2022 related to the changes in fair value of Verve's stock. The value of this investment as of June 30, 2023 is $10.3 million.

In October 2021, the Company entered into an agreement pursuant to which Verve subleased 12,000 square feet of the Company’s existing office and laboratory space for a term of one year which began in December 2021. The Company recorded $0.3 million and $0.6 million of sublease income related to this sublease within the accompanying consolidated statements of operations and other comprehensive loss for the three and six months ended June 30, 2022, respectively, as well as its proportionate costs for the landlord’s operating expense, insurance, property taxes, and utilities. As of December 31, 2022, the Verve sublease agreement had expired and as such no sublease income related to this sublease was recorded during the three and six months ended June 30, 2023.

Prime Medicine

The Company and Prime are parties to a collaboration and license agreement and had a common founder and had a common board member from September 2019 to September 2022.

As of June 30, 2023 the Company owns 1,608,337 shares of Prime's common stock, the value of which is included in marketable securities in the condensed consolidated balance sheet. The Company recorded the investment at fair value as of June 30, 2023, which resulted in a recognition of other income of $3.8 million during the three months ended June 30, 2023 and $6.3 million of other expense for the six months ended June 30, 2023. The Company did not record any other income or expense related to the changes in fair value of Prime's common stock for the three or six months ended June 30, 2022. The value of this investment as of June 30, 2023 is $23.6 million.

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

The following discussion and analysis of our financial condition and results of operations should be read in conjunction with our condensed consolidated financial statements and the related notes to those statements included elsewhere in this Quarterly Report on Form 10-Q. In addition to historical financial information, the following discussion and analysis contains forward-looking statements that involve important risks, uncertainties and assumptions. Some of the numbers included herein have been rounded for the convenience of presentation. Our actual results may differ materially from those anticipated in these forward-looking statements as a result of many factors, including those discussed in "Risk Factors" in Part II, Item 1A. and elsewhere in this Quarterly Report on Form 10-Q, and in the "Risk Factors Summary" and Part I "Item 1A. Risk Factors" section of our Annual Report on Form 10-K for the fiscal year ended December 31, 2022, or the 2022 Form 10-K.

Overview

We are a biotechnology company committed to establishing the leading, fully integrated platform for precision genetic medicines. Our vision is to provide life-long cures to patients suffering from serious diseases. To achieve this vision, we have assembled a platform that includes a suite of gene editing and delivery technologies and are establishing internal manufacturing capabilities. Our suite of gene editing technologies is anchored by our proprietary base editing technology, which potentially enables a differentiated class of precision genetic medicines that target a single base in the genome without making a double-stranded break in the DNA.

We are advancing our base editing technology across three disease-area portfolios: hematology, immunology/oncology and genetic diseases. We are also pursuing a broad suite of both clinically validated and novel delivery modalities, depending on tissue type, including both *ex vivo* approaches in our hematology and immunology-oncology portfolios as well as *in vivo* approaches across our programs.

The elegance of the base editing approach combined with a tissue specific delivery modality provides the basis for a targeted efficient, precise, and highly versatile gene editing system, capable of gene correction, gene modification, gene silencing or gene activation, and/or multiplex editing of several genes simultaneously. We are currently advancing a broad, diversified portfolio of base editing programs against distinct editing targets, utilizing the full range of our development capabilities. Furthermore, in addition to our portfolio, we are also pursuing an innovative, platform-based business model with the goal of further expanding our access to new technologies in genetic medicine and increasing the reach of our programs to more patients. Overall, we are seeking to build the leading integrated platform for precision genetic medicine, which may have broad therapeutic applicability and the potential to transform the field of precision genetic medicines.

Hematology: *Ex Vivo* HSCs

We are advancing hematology base editing programs in which hematopoietic stem cells, or HSCs, are collected from a patient, edited using electroporation, a clinically validated technology for the delivery of therapeutic constructs into harvested cells, and then infused back into the patient following a myeloablative conditioning regimen, such as treatment with busulfan, the standard of care in HSC transplantation today. Once reinfused, the HSCs begin repopulating a portion of the bone marrow in a process known as engraftment. The engrafted, edited HSCs give rise to progenitor cell types with the corrected gene sequences. We plan to deploy this *ex vivo* approach in our BEAM-101 (sickle cell disease and beta thalassemia) and Engineered Stem Cell Antibody Paired Evasion, or ESCAPE (improved conditioning) base editing programs.

We are pursuing a long-term, staged development strategy for our base editing approach to treat hematological diseases that consists of advancing our *ex vivo* program, BEAM-101, in Wave 1, improving patient conditioning regimens in Wave 2, and enabling *in vivo* base editing with delivery directly into HSCs of patients via lipid nanoparticles, or LNPs, in Wave 3. We believe this suite of technologies – base editing, improved conditioning and *in vivo* delivery for editing HSCs – can maximize the potential applicability of our sickle cell disease programs to patients as well as create a platform for the treatment of many other severe genetic blood disorders.

Wave 1:* Ex Vivo *Base Editing via Autologous Transplant with BEAM-101

We are using base editing to pursue the development of BEAM-101 for the treatment of sickle cell disease and beta-thalassemia.

BEAM-101: Recreating naturally-occurring protective mutations to activate fetal hemoglobin

BEAM-101 is a patient-specific, autologous HSC investigational therapy designed to offer a potentially best-in-class profile, incorporating base edits that are intended to mimic single nucleotide polymorphisms seen in individuals with HPFH. BEAM-101 aims to alleviate the effects of sickle cell disease or beta-thalassemia by increasing fetal hemoglobin, which is expected to increase functional hemoglobin production and, in the case of sickle cell disease, inhibit hemoglobin S polymerization. We are continuing to consent patients in our Phase 1/2 clinical trial designed to assess the safety and efficacy of BEAM-101 for the treatment of sickle cell disease, which we refer to as our BEACON trial. The initial patients are moving in parallel through the screening, transfusion and mobilization activities required to enable treatment with BEAM-101. Under the trial protocol, treatment with BEAM-101 (in which the edited cell product is delivered in a bone marrow transplant) will occur on a sequential basis for a sentinel cohort of three patients, and then will be delivered in parallel for all subsequent patients. We anticipate that currently consented patients are sufficient to both fill the sentinel cohort and to initiate the expansion cohort of the trial. We will continue adding additional patients to the BEACON

trial through the end of year and beyond, with a total target of 45 treated patients. The clinical trial is designed to initially include patients ages 18 to 35 with severe sickle cell disease who have received prior treatment with at least one disease-modifying agent with inadequate response or intolerance. Following mobilization, conditioning and treatment with BEAM-101, patients will be assessed for safety and tolerability, with safety endpoints including neutrophil and platelet engraftment. Patients will also be assessed for efficacy, with efficacy endpoints including the change from baseline in severe vaso-occlusive events, transfusion requirements, hemoglobin F levels, and quality of life assessments. We plan to report data from multiple patients from the BEACON trial in 2024.

BEAM-102: Direct correction of the sickle cell mutation

A second base editing approach for sickle cell disease, BEAM-102, is designed to directly correct the causative sickle mutation at position 6 of the beta globin gene. By making a single A-to-G edit, we have demonstrated in primary human CD34+ cells isolated from sickle cell disease patients the ability to create the naturally occurring HbG or "Makassar" variant of hemoglobin. This variant, which was identified in humans and first published in 1970, has the same function as the wild-type variant and does not cause sickle cell disease. Distinct from other approaches, cells that are successfully edited in this way are fully corrected, no longer containing the sickle protein.

In November 2022, we announced that we have decided to optimize our direct correction, "Makassar" approach, alongside our HPFH approach, for Wave 2 and Wave 3 of our sickle cell disease programs.

Wave 2: Improved Conditioning

In parallel with Wave 1 development, we also aim to improve the transplant conditioning regimen for sickle cell disease patients undergoing HSC transplantation, or HSCT, reducing toxicity challenges associated with HSCT standard of care. Conditioning is a critical component necessary to prepare a patient's body to receive the *ex vivo* edited cells that must engraft in the patient's bone marrow in order to be effective. However, today's conditioning regimens rely on nonspecific chemotherapy or radiation, which are associated with significant toxicities. As a potential alternative to genotoxic conditioning regimens in HSCT, we are advancing our ESCAPE program. ESCAPE conditioning regimens could potentially be paired with BEAM-101 and BEAM-102, as well as other base editing programs in hematology.

ESCAPE: Improved Conditioning for HSCT in sickle cell disease

ESCAPE aims to avoid toxicity challenges associated with currently available conditioning regimens for patients with sickle cell disease and beta-thalassemia ahead of autologous HSCT. ESCAPE may also have applications in other diseases of the blood and immune system where HSCT could deliver potential benefits but has been limited by toxicities associated with current standard of care conditioning regimens. In December 2022, we presented preclinical data at the 2022 American Society of Hematology Annual Meeting and Exposition, or ASH, on our ESCAPE-1 and ESCAPE-2 programs. ESCAPE-1 consists of multiplex base edited HSCs that include a therapeutic edit for sickle cell disease at the HGB1/2 gene and an additional edit at CD117. ESCAPE-2 consists of multiplex base-edited HSCs that include a therapeutic HbG-Makassar edit and an edit in CD117, which is compatible with the conditioning mAb used in ESCAPE-1. We plan to continue to invest significantly in the advancement of our ESCAPE platform.

Wave 3:* In Vivo *Base Editing via HSC-targeted LNPs

We are also exploring the potential for *in vivo* base editing programs for sickle cell disease, in which base editors would be delivered to the patient through an infusion of LNPs targeted to HSCs, eliminating the need for transplantation altogether. This approach could provide a more accessible option for patients, particularly in regions where *ex vivo* treatment is challenging. Building on our acquisition of Guide Therapeutics, or Guide, we are using our proprietary DNA- and RNA-barcoded LNP screening technology to enable high-throughput *in vivo* identification of LNPs with novel biodistribution and selectivity for target organs beyond the liver.

Achieving Understanding of the Natural History of Sickle Trait (AUNT) Study

In May 2022, we announced the initiation of a sickle cell trait, or SCT, focused natural history study. Carriers of sickle cell disease, or those with SCT, have only one copy of the hemoglobin gene, have HbS levels between 25-45%, and are thought to have a benign condition. However, despite SCT impacting approximately 300 million people around the world, the key hematologic and clinical phenotypic characteristics and functional impacts from having SCT have been understudied in a prospective manner. As part of a long-term lifecycle strategy for our sickle cell disease programs, we, in collaboration with the National Alliance of Sickle Cell Centers, the University of Alabama, and Johns Hopkins Medical Center, have initiated the AUNT (Achieving Understanding of the Natural History of Sickle Trait) Study.

The AUNT Study is designed to establish an understanding of the hematologic and clinical phenotype of people with SCT, including blood rheology, potential complications and genetic modifiers, in an effort to better understand the hematologic phenotype that is associated with good health and lack of organ dysfunction. The study is designed to enroll approximately 1,000 participants with SCT in the United States who have been identified as family members of participants in the Global Research Network for Data and Discovery, a multi-institutional prospective registry comprising clinical and background data from more than 1,200 adult and pediatric individuals with sickle cell disease from 1999-2021.

Immunology/Oncology: *Ex vivo* T cell therapies

The starting material for our multiplex-edited allogeneic CAR-T cell products is white blood cells from a healthy donor, which are collected using a standard blood bank procedure known as leukapheresis. Using a single electroporation, we introduce the base editor as mRNA, and the guides encoding the target sequences. The edited cells are subsequently transduced with a lentivirus expressing the CAR. Once the T cells have been engineered, they are expanded and frozen. After the patient is lymphodepleted, the multiplex-edited, allogeneic cell product is infused.

We believe base editing is a powerful tool to simultaneously multiplex edit many genes without the unintended on-target effects that can result from simultaneous editing with nucleases through the creation of double-stranded breaks. The ability to create a large number of multiplex edits in T cells could endow CAR-T cells and other cell therapies with combinations of features that have the potential to dramatically enhance their therapeutic potential in treating hematological or solid tumors. The initial indications that we plan to target with these product candidates are relapsed, refractory T-cell acute lymphoblastic leukemia /T cell lymphoblastic lymphoma, or T-ALL/T-LL, and Acute Myeloid Leukemia, or AML. We believe that our approach has the potential to produce higher response rates and deeper remissions than existing approaches.

BEAM-201: Universal CD7-targeting CAR-T cells

BEAM-201 is a development candidate comprised of T cells derived from healthy donors that are simultaneously edited at TRAC, CD7, CD52 and PDCD1 and then transduced with a lentivirus encoding for an anti-CD7 chimeric antigen receptor, or CAR, that is designed to create allogeneic CD7 targeting CAR-T cells, resistant to both fratricide and immunosuppression. At the end of June 2022, we submitted an IND to the FDA for BEAM-201 for the treatment of relapsed, refractory T-ALL/T-LL, a severe disease affecting children and adults, and potentially other CD7+ malignancies. In December 2022, we received clearance from the FDA for our IND for BEAM-201. We have initiated a first-in-human Phase 1/2 clinical trial designed to evaluate the safety and efficacy of BEAM-201 in patients with relapsed/refractory T-ALL/T-LL. Multiple clinical trial sites are open for enrollment in the BEAM-201 trial. The first BEAM-201 trial patient has consented and is expected to be dosed in the third quarter of 2023. The Phase 1 portion of the trial is expected to include up to 48 patients between the ages of 18 and 50, followed by a Phase 2 portion with approximately 48 patients. Key safety endpoints for the trial include treatment-emergent and treatment-related adverse events, and key efficacy endpoints include proportion of patients with complete or partial responses, proportion eligible for HSC transplant and proportion achieving minimal residual disease negative status. We believe that BEAM-201 is the first quadruple-edited, allogeneic CAR-T cell investigational therapy in clinical-stage development.

Genetic Diseases: *In vivo* LNPs and novel viral delivery

LNPs are a clinically validated technology for delivery of nucleic acid payloads to the liver. LNPs are multi-component particles that encapsulate the base editor mRNA and one or more guides and protect them from degradation while in an external environment, enabling the transient delivery of the base editor *in vivo*. Multiple third-party clinical trials have demonstrated the effective delivery of silencing RNA to the liver using LNPs. Because only one dose of a base editing therapy may be needed in a course of treatment, LNPs are a suitable delivery modality that we believe is unlikely to face the complications seen with chronic use of LNPs, such as those observed when delivering oligonucleotides or mRNA for gene therapy. All of the components of the LNP, as well as the mRNA encoding the base editor, are well-defined and can be manufactured synthetically, providing the opportunity for scalable manufacturing. We are currently planning to use LNPs to advance our programs for genetic liver diseases, including glycogen storage disease 1a, or GSDIa, alpha-1 antitrypsin deficiency, or AATD, and Hepatitis B Virus, or HBV, infection. We are also planning to advance multiple additional *in vivo* liver editing programs through lead optimization in 2023.

Viral delivery systems, such as AAV viral vectors, use a non-pathogenic virus that is repurposed to carry a therapeutic payload. Several clinical trials have been conducted or are in progress with different AAV variants for multiple diseases, including diseases of the eye, liver, muscle, lung and central nervous system, however, our DNA base editors are larger than packaging limit of AAV vectors, requiring dual infection where each virus contains approximately one half of the editor. To address these and other limitations of AAV technology, we are advancing other novel viral delivery technologies that we believe will be better suited to delivery of gene editing therapies.

BEAM-301:* In Vivo *LNP liver-targeting for GSDIa

BEAM-301 is a liver-targeting LNP formulation of base editing reagents designed to correct the R83C mutation, the most prevalent disease-causing mutation for, and the mutation which results in the most severe form of, GSDIa. GSDIa is an autosomal recessive disorder caused by mutations in the G6PC gene that disrupts a key enzyme, G6Pase, critical for maintaining glucose homeostasis. Inhibition of G6Pase activity results in low fasting blood glucose levels that can result in seizures and be fatal. Patients with this mutation typically require ongoing corn starch administration, without which they may enter into hypoglycemic shock within one to three hours. Our approach to treating patients with GSDIa is to apply base editing via LNP delivery to repair the two most prevalent mutations that cause the disease, R83C and Q347X. It is estimated that these two point mutations account for 900 and 500 patients, respectively, in the United States, representing approximately 59% of all GSDIa patients in the United States.

In November 2022, we announced that we had initiated IND-enabling studies for BEAM-301. In the first half of 2024, we plan to submit a regulatory application for BEAM-301 for authorization to initiate clinical trials for the program.

BEAM-302:* In Vivo *LNP liver-targeting for AATD

BEAM-302 is a liver-targeting LNP formulation of base editing reagents designed to offer a one-time treatment to genetically correct the E342K point mutation (PiZZ genotype) responsible for a severe form of AATD. AATD is an inherited genetic disorder that can cause early onset emphysema and liver disease. The most severe form of AATD arises when a patient has a point mutation in both copies of the SERPINA1 gene at amino acid 342 position (E342K, also known as the PiZ mutation or the "Z" allele). This point mutation causes Alpha-1 antitrypsin, or AAT, to misfold, accumulating inside liver cells rather than being secreted, resulting in very low levels (10%-15%) of circulating AAT. As a consequence, the lung is left unprotected from neutrophil elastase, resulting in progressive, destructive changes in the lung, such as emphysema, which can result in the need for lung transplants. The mutant AAT protein also accumulates in the liver, causing liver inflammation and cirrhosis, which can ultimately cause liver failure or cancer requiring patients to undergo a liver transplant. It is estimated that approximately 60,000 individuals in the United States have two copies of the Z allele. There are currently no curative treatments for patients with AATD.

With the high efficiency and precision of our base editors, we aim to utilize our ABEs to enable the programmable conversion of A-to-T and G-to-C base pairs and precisely correct the E342K point mutation back to the wild type sequence. In 2020, we showed the ability to directly correct the mutation causing AATD, providing both *in vitro* and *in vivo* preclinical proof-of-concept for base editing to correct this disease.

In November 2022, we announced BEAM-302 as a development candidate as a treatment for AATD, and in the first quarter of 2024, we plan to submit a regulatory application for BEAM-302 for authorization to initiate clinical trials for the program.

Hepatitis B Virus

HBV causes serious liver infection that can become chronic, increasing the risk of developing life-threatening health issues like cirrhosis, liver failure or liver cancer. Chronic HBV infection is characterized by the persistence of covalently closed circular DNA, or cccDNA, a unique DNA structure that forms in response to HBV infection in the nuclei of liver cells. Additionally, the HBV DNA can integrate into the human genome becoming a source of hepatitis B surface antigen, or HBsAg. While currently available treatments can manage HBV replication, they do not clear cccDNA from the infected liver cells. This inability to prevent HBV infection rebound from cccDNA is a key challenge to curing HBV. In September 2022, we presented preclinical data that demonstrated the potential of our multiplex base editors to reduce viral markers, including HBsAg expression, and prevent viral rebound of HBV in *in vivo* models.

Stargardt disease

We are currently evaluating base editing technology to correct one of the most prevalent mutations in the ABCA4 gene causing Stargardt disease, a progressive macular degeneration disease. This mutation is known as the G1961E point mutation and approximately 5,500 individuals in the United States are affected. Disease modeling using tiny light stimuli through holes that are equivalent in size to a single photoreceptor cell suggests that only 12%-20% of these cells are necessary to preserve vision. We anticipate, therefore, that editing percentages in the range of 12%-20% of these cells would be disease-modifying, since each edited cell will be fully corrected and protected from the biochemical defect associated with Stargardt disease.

In a human retinal pigment epithelial cell line (ARPE-19 cells) in which we have knocked in the ABCA4 G1961E point mutation, we have demonstrated the precise correction of approximately 75% of the disease alleles at five weeks after dual infection with an AAV system.

Manufacturing

To realize the full potential of base editors as a differentiated class of medicines and to enable our parallel investment strategy in multiple delivery modalities, we are building customized and integrated capabilities across discovery, manufacturing, and preclinical and clinical development. Due to the critical importance of high-quality manufacturing and control of production timing and know-how, we are establishing our own manufacturing facility, which will provide us the flexibility to manufacture a variety of different product modalities. We believe this investment will maximize the value of our portfolio and capabilities, the probability of technical success of our programs, and the speed at which we can provide potentially life-long cures to patients.

We have a 100,000 square foot manufacturing facility in Research Triangle Park, North Carolina intended to support a broad range of clinical programs. The facility became operational in the first quarter of 2023, and we expect it to initiate cGMP operations in late 2023. The facility is designed to support manufacturing for our *ex vivo* cell therapy programs in hematology and oncology and *in vivo* non-viral delivery programs for liver diseases, with the capability to scale-up to support potential commercial supply. For our initial waves of clinical trials, we expect to use CMOs with relevant manufacturing experience in genetic medicines alongside our internal manufacturing capabilities.

Collaborations

We believe our collection of base editing, gene editing and delivery technologies has significant potential across a broad array of genetic diseases. To fully realize this potential, we have established and will continue to seek out innovative collaborations, licenses, and strategic alliances with pioneering companies and with leading academic and research institutions. Additionally, we have and will continue to pursue relationships that potentially allow us to accelerate our preclinical research and development efforts. These relationships will allow us to aggressively pursue our vision of maximizing the potential of base editing to provide life-long cures for patients suffering from serious diseases.

Pfizer

In December 2021, we entered into a four-year research collaboration agreement with Pfizer Inc., or Pfizer, focused on *in vivo* base editing programs for three targets for rare genetic diseases of the liver, muscle and central nervous system. Under the terms of the agreement, we will conduct all research activities through development candidate selection for three pre-specified, undisclosed targets, which are not included in our existing programs. Pfizer may opt in to exclusive, worldwide licenses to each development candidate, after which it will be responsible for all development activities, as well as potential regulatory approvals and commercialization, for each such development candidate. We have a right to opt in, at the end of Phase 1/2 clinical trials, upon the payment of an option exercise fee, to a global co-development and co-commercialization agreement with respect to one program licensed under the collaboration pursuant to which we and Pfizer would share net profits as well as development and commercialization costs in a 35%/65% ratio (Beam/Pfizer).

Apellis Pharmaceuticals

In June 2021, we entered into a research collaboration agreement, or the Apellis Agreement, with Apellis Pharmaceuticals, Inc., or Apellis, focused on the use of our base editing technology to discover new treatments for complement system-driven diseases. Under the terms of the Apellis Agreement, we will conduct preclinical research on six base editing programs that target specific genes within the complement system in various organs, including the eye, liver, and brain. Apellis has an exclusive option to license any or all of the six programs and will assume responsibility for subsequent development. We may elect to enter into a 50-50 U.S. co-development and co-commercialization agreement with Apellis with respect to one program licensed under the collaboration.

Verve Therapeutics

In April 2019, we entered into a collaboration and license agreement, or the Verve Agreement, with Verve Therapeutics, Inc., or Verve, a company focused on gene editing for cardiovascular disease treatments, and in July 2022, we and Verve amended the Verve Agreement. This collaboration allows us to more fully realize the potential of base editing in treating cardiovascular disease, a disease area outside of our core focus and where Verve has significant expertise. Under the terms of the Verve Agreement, as amended, we granted Verve exclusive worldwide licenses under certain of our editing technologies for human therapeutic applications against a total of three liver-mediated, cardiovascular disease targets, including use of our base editing technology for each of these targets and use of certain of our gene editing technology for two of such targets. In exchange, we received shares of Verve common stock. Additionally, we are eligible to receive milestone payments for certain clinical and regulatory events for licensed products, and we retain the option, after the final dosing of the final patient in a Phase 1 clinical trial of a licensed product, to participate in future development and commercialization, and share 35% of worldwide profits and losses, for any licensed product directed against one of these targets, and share 50% of U.S. profits and losses, for any licensed product directed against the other two targets.

In January 2021, Verve announced it had selected VERVE-101 as its lead product to be developed initially for the treatment of heterozygous familial hypercholesterolemia, or HeFH, a potentially fatal genetic heart disease.

In July 2022, Verve announced that the first patient had been dosed with VERVE-101 in New Zealand as part of its global Phase 1b clinical trial evaluating VERVE-101 as a treatment for patients with HeFH. In September 2022, Verve announced that it had obtained regulatory clearance for a clinical trial application in the United Kingdom, and in November 2022, Verve announced that the FDA had placed its IND application in the United States on clinical hold.

Sana Biotechnology

In October 2021, we entered into an option and license agreement, or the Sana Agreement, with Sana Biotechnology, Inc., or Sana, pursuant to which we granted Sana non-exclusive research and development and commercial rights to our CRISPR Cas12b technology to perform nuclease editing for certain *ex vivo* engineered cell therapy programs. Under the terms of the Sana Agreement, licensed products include certain specified allogeneic T cell and stem cell-derived products directed at specified genetic targets, with certain limited rights for Sana to add and substitute such products and targets. The Sana Agreement excludes the grant of any Beam-controlled rights to perform base editing. In January 2023, Sana announced that the FDA has cleared its IND application to initiate a first-in-human study of SC291, its CD19-targeted allogeneic CAR-T cell therapy, in patients with various B-cell malignancies. In connection with this IND clearance, Sana made a milestone payment to us under the Sana Agreement.

Orbital Therapeutics

In September 2022, we entered into a license and research collaboration agreement, or the Orbital Agreement, with Orbital, pursuant to which each of us granted the other licenses to certain technology controlled during the three years after entry into the Orbital Agreement that are necessary or reasonably useful for the non-viral delivery or the design or manufacture of RNA for the prevention, treatment or diagnosis of human disease. Our license to Orbital is for all fields other than our exclusive field and also excludes the targets and substantially all of the indications that are the subject of our existing programs. Our exclusive field consists of all products and biologics that function in the process of gene editing or conditioning for use in cell transplantation, or that act in combination with any such products or biologics. Orbital's license to us is for all fields other than Orbital's exclusive field. Orbital's exclusive field consists of products and biologics that function as vaccines and also of therapeutic proteins, other than therapeutic proteins (i) that use gene editing, (ii) for use in conditioning, (iii) for use in regenerative medicine, (iv) for use as a CAR immune therapy, including CAR-T, CAR-NK and CAR-macrophage compositions, (v) for use as a t-cell receptor therapy or (vi) that modulate certain immune responses. The licenses are exclusive in each party's exclusive field for three years and non-exclusive in those fields thereafter. We and Orbital agreed that for a period of three years after entry into the Orbital Agreement, subject to limited exceptions, we would not research, develop and commercialize, or grant licenses to research, develop and commercialize, products or biologics within the other party's exclusive field.

Institute of Molecular and Clinical Ophthalmology Basel

In July 2020, we announced a research collaboration with the Institute of Molecular and Clinical Ophthalmology Basel, or IOB. Founded in 2018 by a consortium that includes Novartis, the University Hospital of Basel and the University of Basel, IOB is a leader in basic and translational research aimed at treating impaired vision and blindness. Clinical scientists at IOB have also helped to develop better ways to measure how vision is impacted by Stargardt disease.

Additionally, researchers at IOB have developed living models of the retina, known as organoids, which can be used to test novel therapies. Under the terms of the agreement with IOB, the parties will leverage IOB's unique expertise in the field of ophthalmology along with our novel base editing technology to advance programs directed to the treatment of certain ocular diseases, including Stargardt disease.

Acquisitions

In February 2021, we acquired Guide for upfront consideration in an aggregate amount of $120.0 million, excluding customary purchase price adjustments, in shares of our common stock, based upon the volume-weighted average price of the common stock over the ten trading-day period ending on February 19, 2021. In addition, Guide's former stockholders and option holders are eligible to receive up to an additional $100.0 million in technology milestone payments and $220.0 million in product milestone payments, payable in our common stock.

Critical accounting policies and significant judgments and estimates

Our management's discussion and analysis of our financial condition and results of operations is based on our consolidated financial statements, which we have prepared in accordance with U.S. generally accepted accounting principles. The preparation of our financial statements requires us to make estimates, judgments and assumptions that affect the reported amounts of assets, liabilities, and expenses and the disclosure of contingent assets and liabilities in our financial statements. We base our estimates on historical experience, known trends and events and various other factors that we believe are reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. We evaluate our estimates and assumptions on an ongoing basis. Our actual results may differ from these estimates under different assumptions or conditions.

Our critical accounting policies are those policies which require the most significant judgments and estimates in the preparation of our condensed consolidated financial statements. We have determined that our most critical accounting policies are those relating to stock-based compensation, variable interest entities, fair value measurements, and leases. There have been no significant changes to our existing critical accounting policies and significant judgments and estimates discussed in the 2022 Form 10-K.

Financial operations overview

General

We were founded in January 2017 and began operations in July 2017. Since our inception, we have devoted substantially all of our resources to building our base editing platform and advancing development of our portfolio of programs, establishing and protecting our intellectual property, conducting research and development activities, organizing and staffing our company, business planning, raising capital and providing general and administrative support for these operations. To date, we have financed our operations primarily through the sales of our redeemable convertible preferred stock, proceeds from offerings of our common stock and payments received under collaboration and license agreements.

We are an early-stage company, and all of our programs are at a preclinical or early clinical stage of development. To date, we have not generated any revenue from product sales and do not expect to generate revenue from the sale of products for the foreseeable future. Our revenue to date has been primarily derived from license and collaboration agreements with partners. Since inception we have incurred significant operating losses. Our net losses for the six months ended June 30, 2023 and 2022 were $179.2 million and $141.2 million, respectively. As of June 30, 2023, we had an accumulated deficit of $1.2 billion. We expect to continue to incur significant expenses and increasing operating losses in connection with ongoing development activities related to our internal programs and collaborations as we continue our preclinical and clinical development of product candidates; advance additional product candidates toward clinical development; operate our cGMP facility in North Carolina; further develop our base editing platform; continue to make investments in delivery technology for our base editors, including the LNP technology we acquired through our acquisition of Guide; conduct research activities as we seek to discover and develop additional product candidates; maintain, expand, enforce, defend and protect our intellectual property portfolio; and continue to hire research and development, clinical, technical operations and commercial personnel. In addition, we expect to continue to incur the costs associated with operating as a public company.

As a result of these anticipated expenditures, we will need to raise additional capital to support our continuing operations and pursue our growth strategy. Until such time as we can generate significant revenue from product sales, if ever, we expect to finance our operations through a combination of equity offerings, debt financings, collaborations, strategic alliances, and licensing arrangements. We may be unable to raise additional funds or enter into such other agreements when needed on favorable terms or at all. Our inability to raise capital as and when needed would have a negative impact on our financial condition and our ability to pursue our business strategy. We can give no assurance that we will be able to secure such additional sources of capital to support our operations, or, if such capital is available to us, that such additional capital will be sufficient to meet our needs for the short or long term.

Revenue Recognition

In April 2019, we entered into the Verve Agreement with Verve, a company focused on gene editing for cardiovascular disease treatments. In June 2021, we entered into the Apellis Agreement with Apellis, focused on the use of our base editing technology to discover new treatments for complement system-driven diseases. In October 2021, we entered into the Sana Agreement with Sana, pursuant to which we granted Sana non-exclusive research and development and commercial rights to our CRISPR Cas12b technology to perform nuclease editing for certain *ex vivo* engineered cell therapy programs. In December 2021, we entered into the Pfizer Agreement with Pfizer, focused on *in vivo* base editing programs for three targets for rare genetic diseases of the liver, muscle and central nervous system. In September 2022, we entered into the Orbital Agreement with Orbital, a newly formed entity focused on advancing non-viral delivery and RNA technologies.

We have not generated any revenue to date from product sales and do not expect to do so in the near future. During the six months ended June 30, 2023 and 2022, we recognized $44.3 million and $25.1 million of license and collaboration revenue, respectively.

Research and development expenses

Research and development expenses consist of costs incurred in performing research and development activities, which include:

- Expenses incurred in connection with our clinical trials, including contract research organization costs and costs related to study preparation;
- the cost of manufacturing materials for use in our preclinical studies, IND-enabling studies and clinical trials;
- expenses incurred in connection with investments in delivery technology for our base editors, including the LNP technology we acquired through our acquisition of Guide;
- expenses incurred in connection with the discovery and preclinical development of our research programs, including under agreements with third parties, such as consultants, contractors and contract research organizations;
- personnel-related expenses, including salaries, bonuses, benefits and stock-based compensation for employees engaged in research and development functions;

- the cost to obtain licenses to intellectual property, such as those with Harvard University, or Harvard, The Broad Institute, Inc., or Broad Institute, Editas Medicine, Inc., or Editas, and Bio Palette Co., Ltd., or Bio Palette, and related future payments should certain success, development and regulatory milestones be achieved;
- expenses incurred in connection with the building of our base editing platform;
- expenses incurred in connection with regulatory filings;
- laboratory supplies and research materials; and
- facilities, depreciation and other expenses which include direct and allocated expenses.

Our external research and development expenses support our various preclinical and clinical programs. Our internal research and development expenses consist of employee-related expenses, facility-related expenses, and other indirect research and development expenses incurred in support of overall research and development. We expense research and development costs as incurred. Advance payments that we make for goods or services to be received in the future for use in research and development activities are recorded as prepaid expenses. The prepaid amounts are expensed as the benefits are consumed.

In the early phases of development, our research and development costs are often devoted to product platform and proof-of-concept preclinical studies that are not necessarily allocable to a specific target.

We expect that our research and development expenses will increase substantially as we advance our programs through their planned preclinical and clinical development.

General and administrative expenses

General and administrative expenses consist primarily of salaries and other related costs, including stock-based compensation, for personnel in our executive, intellectual property, business development and administrative functions. General and administrative expenses also include legal fees relating to intellectual property and corporate matters, professional fees for accounting, auditing, tax and consulting services, insurance costs, travel, and direct and allocated facility related expenses and other operating costs.

We anticipate that our general and administrative expenses will increase in the future to support our increased research and development activities. We also expect to continue to incur costs associated with being a public company and maintaining controls over financial reporting, including costs of accounting, audit, legal, regulatory and tax-related services associated with maintaining compliance with Nasdaq and SEC requirements, director and officer insurance costs, and investor and public relations costs.

Other income and expenses

Other income and expenses consist of the following items:

- *Change in fair value of derivative liabilities* consists primarily of remeasurement gains or losses associated with changes in success payment liabilities associated with our license agreement with Harvard, dated as of June 27, 2017, as amended, or the Harvard License Agreement, and the license agreement with The Broad Institute, as amended, dated as of May 9, 2018, or the Broad License Agreement.
- *Change in fair value of non-controlling equity investments* consists of mark-to-market adjustments related to our investments in corporate equity securities.
- *Change in fair value of contingent consideration liabilities* consists of remeasurement gains or losses associated with changes in the technology and product contingent consideration liabilities related to the acquisition of Guide.
- *Interest and other income (expense)*, consists primarily of interest income, as well as interest expense related to our equipment financings.

Results of operations

Comparison of the three months ended June 30, 2023 and 2022

The following table summarizes our results of operations (in thousands):

	Three Months Ended June 30,		
	2023	2022	Change
License and collaboration revenue	$ 20,116	$ 16,652	$ 3,464
Operating expenses:			
Research and development	97,608	74,556	23,052
General and administrative	24,656	24,062	594
Total operating expenses	122,264	98,618	23,646
Loss from operations	(102,148)	(81,966)	(20,182)
Other income (expense):			
Change in fair value of derivative liabilities	(900)	12,200	(13,100)
Change in fair value of non-controlling equity investments	6,148	(4,124)	10,272
Change in fair value of contingent consideration liabilities	2,171	(120)	2,291
Interest and other income (expense), net	11,953	2,060	9,893
Total other income (expense)	19,372	10,016	9,356
Net Loss	$ (82,776)	$ (71,950)	$ (10,826)

License and collaboration revenue

License and collaboration revenue was $20.1 million and $16.7 million for the three months ended June 30, 2023 and 2022, respectively. License and collaboration revenue represents revenue recorded under each of the Pfizer, Apellis, Verve, and Orbital Agreements.

Research and development expenses

Research and development expenses were $97.6 million and $74.6 million for the three months ended June 30, 2023 and 2022, respectively. The following table summarizes our research and development expenses for the three months ended June 30, 2023 and 2022 (in thousands):

	Three Months Ended June 30,		
	2023	2022	Change
External research and development expenses	$ 36,834	$ 24,672	$ 12,162
Employee related expenses	27,565	21,486	6,079
Facility and IT related expenses	16,849	12,589	4,260
Stock-based compensation expense	15,521	13,428	2,093
Other expenses	839	2,381	(1,542)
Total research and development expenses	$ 97,608	$ 74,556	$ 23,052

The increase of $23.1 million was primarily due to the following:

- A $12.2 million increase in external research and development expenses driven by a $10.4 million increase in outsourced services, due primarily to clinical expenses for BEAM-101 and BEAM-201, IND-enabling studies and assay development for BEAM-301 and BEAM-302 and manufacturing operations. Also contributing to the rise in external research and development expenses is an increase of $1.8 million in lab supplies due to the growth in research and development employees and continued investment in process development efforts;
- An increase of $6.1 million of employee related expenses and $4.3 million of facility and IT related costs, including depreciation. These increases were due to the growth in the number of research and development employees from 394 at June 30, 2022 to 444 at June 30, 2023, and their related activities, as well as the expense allocated to research and development related to our leased facilities; and
- An increase of $2.1 million in stock-based compensation from additional stock options and restricted stock units granted due to the increase in the number of research and development employees and issuance of annual equity awards to existing employees.
- The above increases were partially offset by a net decrease in other expenses of $1.5 million, primarily driven by lower sublicense expenses during the three months ended June 30, 2023 related to our collaborations.

Research and development expenses are expected to continue to increase as we continue clinical trials for BEAM-101, initiate clinical trials for BEAM-201, advance IND-enabling studies for BEAM-301 and BEAM-302, continue our current research programs, initiate new research programs, continue the preclinical and clinical development of our product candidates and conduct any future preclinical studies and begin to enroll patients in and conduct clinical trials for any of our product candidates.

General and administrative expenses

General and administrative expenses were $24.7 million and $24.1 million for the three months ended June 30, 2023 and 2022, respectively. The increase of $0.6 million was primarily due to the following:

- An increase of $2.6 million in stock-based compensation from additional equity awards due to the growth in the number of general and administrative employees from 82 employees as of June 30, 2022 to 88 employees as of June 30, 2023, and the issuance of annual equity awards to existing employees; and
- An increase of $1.2 million in personnel and facility related costs due to the increase in general and administrative employees and the expense allocated to general and administrative expenses related to our leased facilities.
- The above increases were partially offset by decreases in legal costs of $3.2 million primarily due to higher legal fees incurred in connection with business development activities during the three months ended June 30, 2022.

Change in fair value of derivative liabilities

During the three months ended June 30, 2023 and 2022, we recorded $0.9 million of other expense and $12.2 million of other income, respectively, related to the change in fair value of success payment liabilities due to changes in the price of our common stock over the related periods. A portion of the success payment obligations were paid in June 2021; the remaining success payment obligations are still outstanding as of June 30, 2023 and will continue to be revalued at each reporting period.

Change in fair value of non-controlling equity investments

During the three months ended June 30, 2023 and 2022, we recorded $6.1 million of other income and $4.1 million of other expense, respectively, as a result of changes in the fair value of our investment in Verve and Prime common stock.

Change in fair value of contingent consideration liabilities

During the three months ended June 30, 2023 and 2022, we recorded $2.2 million of other income and $0.1 million of other expense, respectively, related to the change in fair value of the Guide technology and product contingent consideration liabilities.

Interest and other income (expense), net

Interest and other income (expense), net was $12.0 million and $2.1 million of net income for the three months ended June 30, 2023 and 2022, respectively. The change was primarily due to increases in interest income driven by increased market rates.

Comparison of the six months ended June 30, 2023 and 2022

The following table summarizes our results of operations (in thousands):

	Six Months Ended June 30,		
	2023	2022	Change
License and collaboration revenue	$ 44,324	$ 25,084	$ 19,240
Operating expenses:			
Research and development	197,254	139,966	57,288
General and administrative	48,146	43,309	4,837
Total operating expenses	245,400	183,275	62,125
Loss from operations	(201,076)	(158,191)	(42,885)
Other income (expense):			
Change in fair value of derivative liabilities	4,700	25,800	(21,100)
Change in fair value of non-controlling equity investments	(6,649)	(11,809)	5,160
Change in fair value of contingent consideration liabilities	1,875	332	1,543
Interest and other income (expense), net	21,914	2,704	19,210
Total other income (expense)	21,840	17,027	4,813
Net loss	$ (179,236)	$ (141,164)	$ (38,072)

License and collaboration revenue

License and collaboration revenue was $44.3 million and $25.1 million for the six months ended June 30, 2023 and 2022, respectively. License and collaboration revenue represents revenue recorded under each of the Pfizer, Apellis, Verve, and Orbital Agreements.

Research and development expenses

Research and development expenses were $197.3 million and $140.0 million for the six months ended June 30, 2023 and 2022, respectively. The following table summarizes our research and development expenses for the six months ended June 30, 2023 and 2022 (in thousands):

	Six Months Ended June 30,		
	2023	2022	Change
External research and development expenses	$ 77,719	$ 46,777	$ 30,942
Employee related expenses	54,925	40,567	14,358
Facility and IT related expenses	33,544	24,647	8,897
Stock-based compensation expense	29,743	24,722	5,021
Other expenses	1,323	3,253	(1,930)
Total research and development expenses	$ 197,254	$ 139,966	$ 57,288

The increase of $57.3 million was primarily due to the following:

- A $30.9 million increase in external research and development expenses driven by a $26.5 million increase in outsourced services, due primarily to manufacturing and clinical expenses for BEAM-101 and BEAM-201, IND-enabling studies and assay development for BEAM-301 and BEAM-302, manufacturing operations and animal studies conducted to further our LNP platform. Also contributing to the rise in external research and development expenses is an increase of $4.4 million in lab supplies due to the growth in research and development employees and continued investment in process development and LNP discovery efforts;
- An increase of $14.4 million of employee related expenses and $8.9 million of facility and IT related costs, including depreciation. These increases were due to the growth in the number of research and development employees from 394 at June 30, 2022 to 444 at June 30, 2023, and their related activities, as well as the expense allocated to research and development related to our leased facilities; and
- An increase of $5.0 million in stock-based compensation from additional stock options and restricted stock units granted due to the increase in the number of research and development employees and issuance of annual equity awards to existing employees.
- The above increases were partially offset by a net decrease in other expenses of $1.9 million, primarily driven by lower sublicense expenses during the six months ended June 30, 2023 related to our collaborations.

General and administrative expenses

General and administrative expenses were $48.1 million and $43.3 million for the six months ended June 30, 2023 and 2022, respectively. The increase of $4.8 million was primarily due to the following:

- An increase of $5.6 million in stock-based compensation from additional equity awards due to the growth in the number of general and administrative employees from 82 employees as of June 30, 2022 to 88 employees as of June 30, 2023, and the issuance of annual equity awards to existing employees; and
- An increase of $3.2 million in personnel and facility related costs due to the increase in general and administrative employees and the expense allocated to general and administrative expenses related to our leased facilities.
- The above increases were partially offset by a decrease in legal costs of $4.0 million primarily due to higher legal fees incurred in connection with business development activities during the six months ended June 30, 2022.

Change in fair value of derivative liabilities

During the six months ended June 30, 2023 and 2022, we recorded $4.7 million and $25.8 million of other income, respectively, related to the change in fair value of success payment liabilities due to a decrease in the price of our common stock over the related periods. A portion of the success payment obligations were paid in June 2021; the remaining success payment obligations are still outstanding as of June 30, 2023 and will continue to be revalued at each reporting period.

Change in fair value of non-controlling equity investments

During the six months ended June 30, 2023 and 2022, we recorded $6.6 million and $11.8 million of other expense, respectively, as a result of changes in the fair value of our investment in Verve and Prime common stock.

Change in fair value of contingent consideration liabilities

During the six months ended June 30, 2023 and 2022, we recorded $1.9 million and $0.3 million of other income, respectively, related to the change in fair value of the Guide technology and product contingent consideration liabilities.

Interest and other income (expense), net

Interest and other income (expense), net was $21.9 million and $2.7 million of net income for the six months ended June 30, 2023 and 2022, respectively. The change was primarily due to increases in interest income driven by increased market rates.

Liquidity and capital resources

Since our inception in January 2017, we have not generated any revenue from product sales, have generated only limited license and collaboration revenue from our license and collaboration agreements, and have incurred significant operating losses and negative cash flows from our operations. We expect to incur significant expenses and operating losses for the foreseeable future as we advance the preclinical and the clinical development of our product candidates.

To date, we have funded our operations primarily through equity offerings.

In April 2021, we filed a universal shelf registration statement on Form S-3 with the SEC, or the 2021 Shelf, to register for sale an indeterminate amount of our common stock, preferred stock, debt securities, warrants and/or units, which we may issue and sell in one or more offerings, which became effective upon filing with the SEC (File No. 333-254946).

In April 2021, we entered into an at the market, or ATM, sales agreement, or the Sales Agreement, with Jefferies LLC, or Jefferies, pursuant to which we were entitled to offer and sell, from time to time at prevailing market prices, shares of our common stock having aggregate gross proceeds of up to $300.0 million. We agreed to pay Jefferies a commission of up to 3.0% of the aggregate gross sale proceeds of any shares sold by Jefferies under the Sales Agreement. Between April and July 2021, we sold 2,908,009 shares of our common stock under the Sales Agreement at an average price of $103.16 per share for aggregate gross proceeds of $300.0 million, before deducting commissions and offering expenses payable by us.

In July 2021 and May 2023, we and Jefferies entered into amendments to the Sales Agreement to provide for increases in the aggregate offering amount under the Sales Agreement, such that as of May 10, 2023, we may offer and sell shares of common stock having an aggregate offering price of up to an additional $800.0 million. As of June 30, 2023, we have sold 9,727,417 additional shares of our common stock under the amended Sales Agreement at an average price of $54.30 per share for aggregate gross proceeds of $528.2 million, before deducting commissions and offering expenses payable by us.

In June 2021, we entered into the Apellis Agreement, which is focused on the use of certain of our base editing technology to discover new treatments for complement system-driven diseases. Pursuant to the Apellis Agreement, we received an upfront payment of $50.0 million in July 2021 and an additional $25.0 million payment on the one-year anniversary of the effective date of the Apellis Agreement, which was in June 2022.

In December 2021, we entered into the Pfizer Agreement, which is focused on in vivo base editing programs for three targets for rare genetic diseases of the liver, muscle and central nervous system. Under the terms of the Pfizer Agreement, we will conduct all research activities through development candidate selection for three undisclosed targets, which are not included in our existing programs. Pursuant to the Pfizer Agreement, we received an upfront payment of $300.0 million in January 2022.

As of June 30, 2023, we had $1.1 billion in cash, cash equivalents, and marketable securities.

We are required to make success payments to Harvard and Broad Institute based on increases in the per share fair market value of our common stock. The amounts due may be settled in cash or shares of our common stock, at our discretion. In May 2021, the first success payment measurements occurred and success payments to Harvard and Broad Institute were calculated to be $15.0 million and $15.0 million, respectively. We elected to make each payment in shares of our common stock and issued 174,825 shares to each of Harvard and Broad Institute to settle these liabilities in June 2021. We may additionally owe Harvard and Broad Institute success payments of up to an additional $90.0 million each.

We have not yet commercialized any of our product candidates, and we do not expect to generate revenue from the sale of our product candidates for the foreseeable future. We anticipate that we may need to raise additional capital in order to continue to fund our research and development, including our planned preclinical studies and clinical trials, maintaining and operating a commercial-scale cGMP manufacturing facility, and new product development, as well as to fund our general operations. As necessary, we will seek to raise additional capital through various potential sources, such as equity and debt financings or through corporate collaboration and

license agreements. We can give no assurances that we will be able to secure such additional sources of capital to support our operations, or, if such funds are available to us, that such additional financing will be sufficient to meet our needs.

Cash flows

The following table summarizes our sources and uses of cash (in thousands):

	Six Months Ended June 30,	
	2023	2022
Net cash provided by (used in) operating activities	$ (194,484)	$ 166,214
Net cash provided by (used in) investing activities	(16,029)	(538,601)
Net cash provided by (used in) financing activities	205,958	78,016
Net change in cash, cash equivalents and restricted cash	$ (4,555)	$ (294,371)

Operating activities

Net cash used in operating activities for the six months ended June 30, 2023 was $194.5 million, consisting of our net loss of $179.2 million, a decrease in deferred revenue of $42.8 million, decreases in accrued expenses and other liabilities of $10.2 million, increases in prepaid expenses and other current assets of $6.5 million and a decrease in operating lease liabilities totaling $4.1 million. In addition, we recorded noncash items consisting of amortization of investment premiums of $14.5 million and decreases in the fair value of derivative liabilities and contingent consideration liabilities of $4.7 million and $1.9 million, respectively.

These uses of cash were partially offset by an increase in other long-term liabilities of $1.0 million and noncash items consisting of stock-based compensation expense of $50.2 million, decreases in the fair value of non-controlling equity investments of $6.6 million, depreciation and amortization expense of $9.5 million and changes in operating lease ROU assets of $4.8 million

Net cash provided by operating activities for the six months ended June 30, 2022 was $166.2 million, consisting primarily of the collection of collaboration receivables of $300.0 million related to the Pfizer Agreement, and an increase operating lease liabilities totaling $12.3 million, as well as noncash items consisting primarily of stock-based compensation expense of $39.6 million, a decrease in the fair value of a non-controlling equity investment of $11.8 million, depreciation and amortization expense of $6.7 million, and a change in operating lease ROU assets of $4.1 million.

These sources of cash were partially offset by our net loss of $141.2 million, decreases in accrued expenses and other liabilities of $29.3 million, an increase in prepaid expenses and other current assets of $7.0 million, a decrease in other long-term liabilities of $2.5 million and accounts payable of $1.2 million, and a decrease in deferred revenue of $0.1 million net of the $25.0 million First Anniversary Payment collected from Apellis during the three months ended June 30, 2022, and noncash items including decreases in the fair value of derivative liabilities of $25.8 million as well as amortization of investment premiums of $1.1 million, and a decrease in the fair value of contingent consideration liabilities of $0.3 million.

Investing activities

For the six months ended June 30, 2023, cash used in investing activities consisted of purchases of property and equipment of $22.2 million, partially offset by the net maturities of marketable securities of $6.2 million.

For the six months ended June 30, 2022, cash used in investing activities consisted of the net purchases of marketable securities of $509.7 million and purchases of property and equipment of $28.9 million.

Financing activities

Net cash provided by financing activities for the six months ended June 30, 2023 consisted of net proceeds from equity offerings of $201.6 million, $4.1 million of proceeds from the exercise of stock options and $1.7 million of proceeds from the issuance of common stock under our ESPP, offset in part by repayments of equipment financing liabilities of $1.2 million and payment of equity offering costs of $0.2 million.

Net cash provided by financing activities for the six months ended June 30, 2022 consisted primarily of net proceeds from equity offerings of $76.4 million, $1.5 million of proceeds from the exercise of stock options, and $1.4 million of proceeds from the issuance of common stock under our ESPP, offset in part by repayments of equipment financing liabilities of $1.1 million and equity offering costs of $0.1 million.

Funding requirements

Our operating expenses are expected to increase substantially as we continue to advance our portfolio of programs.

Specifically, our expenses will increase if and as we:

- advance clinical trials of our product candidates, including our BEACON trial and BEAM-201 trial;
- continue our research programs and our preclinical development of product candidates from our research programs;
- seek to identify additional research programs and additional product candidates;
- initiate preclinical studies and clinical trials for additional product candidates we identify and develop;
- maintain, expand, enforce, defend, and protect our intellectual property portfolio and provide reimbursement of third-party expenses related to our patent portfolio;
- seek marketing approvals for any of our product candidates that successfully complete clinical trials;
- establish a sales, marketing, and distribution infrastructure to commercialize any medicines for which we may obtain marketing approval;
- further develop our base editing platform;
- further develop delivery technology for our base editors, including the LNP technology we acquired through our acquisition of Guide;
- continue to hire additional personnel including research and development, clinical and commercial personnel;
- add operational, financial, and management information systems and personnel, including personnel to support our product development;
- acquire or in-license products, intellectual property, medicines and technologies; and
- maintain and operate a commercial-scale cGMP manufacturing facility.

We expect that our cash, cash equivalents and marketable securities at June 30, 2023 will enable us to fund our current and planned operating expenses and capital expenditures for at least the next 12 months from the date of issuance of our accompanying condensed consolidated financial statements. We have based these estimates on assumptions that may prove to be imprecise, and we may exhaust our available capital resources sooner that we currently expect. Because of the numerous risks and uncertainties associated with the development our programs, we are unable to estimate the amounts of increased capital outlays and operating expenses associated with completing the research and development of our product candidates.

Our future funding requirements will depend on many factors including:

- the cost of continuing to build our base editing platform;
- the costs of acquiring licenses for the delivery modalities that will be used with our product candidates;
- the scope, progress, results, and costs of discovery, preclinical development, laboratory testing, manufacturing and clinical trials for the product candidates we may develop;
- the costs of preparing, filing, and prosecuting patent applications, maintaining and enforcing our intellectual property and proprietary rights, and defending intellectual property-related claims;
- the costs, timing, and outcome of regulatory review of the product candidates we develop;
- the costs of future activities, including product sales, medical affairs, marketing, manufacturing, distribution, coverage and reimbursement for any product candidates for which we receive regulatory approval;
- the success of our license agreements and our collaborations;
- our ability to establish and maintain additional collaborations on favorable terms, if at all;
- the achievement of milestones or occurrence of other developments that trigger payments under any collaboration agreements we are a party to or may become a party to, including our agreement with Guide;
- the payment of success liabilities to Harvard and Broad Institute pursuant to the respective terms of the Harvard License Agreement and the Broad Institute License Agreement, should we choose to pay in cash;
- the extent to which we acquire or in-license products, intellectual property, and technologies;

- the costs of obtaining, operating and expanding our manufacturing capacity; and
- the impact on our business of macro-economic conditions, as well as the prevailing level of macro-economic, business, and operational uncertainty, including as a result of geopolitical events or other global or regional events.

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

Until such time, if ever, as we can generate substantial product revenues, we expect to finance our cash needs through a combination of equity offerings, debt financings, collaborations, strategic alliances, and licensing arrangements. We do not have any committed external source of capital. We have historically relied on equity issuances to fund our capital needs and will likely rely on equity issuances in the future. Debt financing, if available, may involve agreements that include covenants limiting or restricting our ability to take specific actions, such as incurring additional debt, making capital expenditures, or declaring dividends.

If we raise capital through additional collaborations, strategic alliances, or licensing arrangements with third parties, we may have to relinquish valuable rights to our technologies, future revenue streams, research programs, or product candidates, or we may have to grant licenses on terms that may not be favorable to us. If we are unable to raise additional capital through equity or debt financings when needed, we may be required to delay, limit, reduce, or terminate our product development or, if approved, future commercialization efforts or grant rights to develop and market product candidates that we would otherwise prefer to develop and market ourselves. We can give no assurance that we will be able to secure such additional sources of funds to support our operations, or, if such funds are available to us, that such additional funding will be sufficient to meet our needs.

Contractual obligations

We enter into contracts in the normal course of business with contract research organizations and other vendors to assist in the performance of our research and development activities and other services and products for operating purposes. These contracts generally provide for termination on notice, and therefore are cancelable contracts and not included in our calculations of contractual obligations and commitments.

We lease certain assets under noncancelable operating and finance leases. The leases relate primarily to office space and laboratory space in addition to equipment. As of June 30, 2023, aggregate future minimum commitments under these office and laboratory leases and equipment leases are $258.3 million and $1.2 million, respectively, of which $12.7 million will be payable in 2023. These minimum lease payments exclude our share of the facility operating expenses, real-estate taxes and other costs that are reimbursable to the landlord under the leases.

During the six months ended June 30, 2023, there were no material changes to our contractual obligations and commitments described under Management’s Discussion and Analysis of Financial Condition and Results of Operations in the 2022 Form 10-K.

Item 3. Quantitative and Qualitative Disclosures About Market Risk.

We are exposed to market risk related to changes in interest rates. As of June 30, 2023, we had cash, cash equivalents, and marketable securities of $1.1 billion, which consisted of cash, money market funds, commercial paper and corporate and government securities. Our cash and cash equivalents are primarily maintained in accounts with multiple financial institutions in the United States. At times, we may maintain cash and cash equivalent balances in excess of Federal Deposit Insurance Corporation limits. We do not believe that we are subject to unusual credit risk beyond the normal credit risk associated with commercial banking relationships. Our primary exposure to market risk is interest rate sensitivity, which is affected by changes in the general level of U.S. interest rates, particularly because our investments are in short-term marketable securities. Due to the short-term duration of our investment portfolio and the low risk profile of our investments, we believe an immediate 10% change in interest rates would not have a material effect on the fair market value of our investment portfolio. We have the ability to hold our investments until maturity, and therefore, we would not expect our operating results or cash flows to be affected to any significant degree by the effect of a change in market interest rates on our investment portfolio.

We are not currently exposed to significant market risk related to changes in foreign currency exchange rates; however, we do contract with vendors that are located outside of the United States and may be subject to fluctuations in foreign currency rates. We may enter into additional contracts with vendors located outside of the United States in the future, which may increase our foreign currency exchange risk.

Inflation generally affects us by increasing our cost of labor and research, manufacturing and development costs. We believe that inflation has not had a material effect on our financial statements included elsewhere in this Quarterly Report on Form 10-Q. However, our operations may be adversely affected by inflation in the future.

Item 4. Controls and Procedures.

Evaluation of Disclosure Controls and Procedures

Our management, with the participation of our principal executive officer and our principal financial officer, evaluated, as of the end of the period covered by this Quarterly Report on Form 10-Q, the effectiveness of our disclosure controls and procedures as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act. The term "disclosure controls and procedures," as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act, means controls and other procedures of a company that are designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is recorded, processed, summarized and reported, within the time periods specified in the SEC's rules and forms. Disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is accumulated and communicated to the Company's management, including its principal executive and principal financial officers, or persons performing similar functions, as appropriate to allow timely decisions regarding required disclosure. Management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving their objectives and management necessarily applies its judgment in evaluating the cost-benefit relationship of possible controls and procedures.

Based on the evaluation of our disclosure controls and procedures as of June 30, 2023, our principal executive officer and principal financial officer concluded that our disclosure controls and procedures as of such date are effective at the reasonable assurance level.

Changes in Internal Control over Financial Reporting

We continuously seek to improve the efficiency and effectiveness of our internal controls. This results in refinements to processes throughout our company. There were no changes in our internal control over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act) during the quarter ended June 30, 2023 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

PART II. OTHER INFORMATION

Item 1. Legal Proceedings

We are not currently subject to any material legal proceedings.

Item 1A. Risk Factors.

Investing in our common stock involves a high degree of risk. For a detailed discussion of the risks that affect our business. Please refer to the sections titled "Risk Factors Summary" and "Item 1A. Risk Factors" in the 2022 Form 10-K.

The risk factors set forth below represent new risk factors or those containing changes to the similarly titled risk factor included in "Item 1.A Risk Factors" of the 2022 Form 10-K.

The intellectual property landscape around gene editing technology, including base editing and delivery technology, is highly dynamic, and third parties may initiate legal proceedings alleging that we are infringing, misappropriating, or otherwise violating their intellectual property rights, the outcome of which would be uncertain and may prevent, delay or otherwise interfere with our product discovery and development efforts.

The field of gene editing, especially in the area of base editing technology, is still in its infancy, and no such product candidates have reached the market. Due to the intense research and development that is taking place by several companies, including us and our competitors, in this field and in the field of delivery technology, the intellectual property landscape is evolving and in flux, and it may remain uncertain for the coming years. There may be significant intellectual property related litigation and proceedings relating to our owned and in-licensed, and other third party, intellectual property and proprietary rights in the future.

Our commercial success depends upon our ability and the ability of our collaborators and licensors to develop, manufacture, market, and sell any product candidates that we may develop and use our proprietary technologies without infringing, misappropriating, or otherwise violating the intellectual property and proprietary rights of third parties. The biotechnology and pharmaceutical industries are characterized by extensive litigation regarding patents and other intellectual property rights as well as administrative proceedings for challenging patents, including interference, derivation, *inter partes* review, post grant review, and reexamination proceedings before the USPTO or oppositions and other comparable proceedings in foreign jurisdictions. We may be subject to and may in the future become party to, or threatened with, adversarial proceedings or litigation regarding intellectual property rights with respect to our base editing platform technology, delivery platform technology and any product candidates we may develop, including interference proceedings, post-grant review, *inter partes* review, and derivation proceedings before the USPTO and similar proceedings in foreign jurisdictions such as oppositions before the EPO. Numerous U.S. and foreign issued patents and pending patent applications that are owned by third parties exist in the fields in which we are developing our product candidates and they may assert infringement claims against us based on existing patents or patents that may be granted in the future, regardless of their merit.

As the biotechnology and pharmaceutical industries expand and more patents are issued, the risk increases that our base editing platform technology, delivery platform technology and product candidates may give rise to claims of infringement of the patent rights of others. Moreover, it is not always clear to industry participants, including us, which patents cover various types of therapies, products or their methods of use or manufacture. We are aware of certain third-party patents and patent applications that, if issued, may be construed to cover our base editing technology, delivery technology and product candidates. There may also be third-party patents of which we are currently unaware with claims to technologies, methods of manufacture or methods for treatment related to the use or manufacture of our product candidates. Because patent applications can take many years to issue, there may be currently pending patent applications that may later result in issued patents that our product candidates may infringe. In addition, third parties may obtain patents in the future and claim that use of our technologies infringes upon these patents.

Numerous third-party U.S. and foreign issued patents and pending patent applications exist in the fields in which we are developing product candidates. Our product candidates make use of CRISPR-based technology, which is a field that is highly active for patent filings. The extensive patent filings related to CRISPR and Cas make it difficult for us to assess the full extent of relevant patents and pending applications that may cover our base editing platform technology and product candidates and their use or manufacture. There may be third-party patents or patent applications with claims to materials, formulations, methods of manufacture or methods for treatment related to the use or manufacture of our base editing platform technology and product candidates. For example, we are aware of a patent portfolio that is co-owned by the University of California, University of Vienna and Emmanuelle Charpentier, or the University of California Portfolio, which contains multiple patents and pending applications directed to gene editing. The University of California portfolio includes, for example, U.S. Patent Nos. 10,266,850; 10,227,611; 10,000,772; 10,113,167; 10,301,651; 10,308,961; 10,337,029; 10,351,878; 10,407,697; 10,358,659; 10,358,658; 10,385,360; 10,400,253; 10,421,980; 10,415,061; 10,428,352; 10,443,076; 10,487,341; 10,513,712; 10,519,467; 10,526,619; 10,533,190; 10,550,407; 10,563,227; 10,570,419; 10,577,631; 10,597,680; 10,612,045; 10,626,419; 10,640,791; 10,669,560; 10,676,759; 10,752,920; 10,774,344; 10,793,878; 10,900,054; 10,982,230; 10,982,231; 10,988,780; 10,988,782; 11,001,863; 11,008,589; 11,008,590; 11,028,412; 11,186,849; 11,242,543; 11,274,318; 11,293,034; 11,332,761; 11,401,532; 11,473,108; 11,479,794; 11,549,127; 11,634,730; 11,674,159, which are expected to expire around March 2033, excluding any additional term for patent term adjustment, or PTA, or patent term

extension, or PTE, and any disclaimed term for terminal disclaimers. The University of California portfolio also includes numerous additional pending patent applications. If these patent applications issue as patents, they are expected to expire around March 2033, excluding any PTA, PTE, and any disclaimed term for terminal disclaimers. As discussed above, certain applications in the University of California Portfolio are currently subject to U.S. Interference No. 106,115 with certain U.S. patents and one U.S. patent application that are co-owned by the Boston Licensing Parties to which we have an option under the Editas License Agreement. Although we have an option to exclusively license certain patents and patent applications directed to Cas9 and Cas12a from Editas, who in turn has licensed such patents from various academic institutions including Broad Institute, we do not currently have a license to such patents and patent applications. Certain members of the University of California Portfolio are being opposed in Europe by multiple parties. For example, the EPO Opposition Division has initiated opposition proceedings against European Patent Nos. EP2,800,811 B1, and EP3,241,902 B1and EP3,401,400 B1, which are estimated to expire in March 2033 (excluding any patent term adjustments or extensions).

The opposition procedure before the EPO allows one or more third parties to challenge the validity of a granted European patent within nine months after grant date of the European patent. Opposition proceedings may involve issues including, but not limited to, priority, patentability of the claims involved, and procedural formalities related to the filing of the patent application. As a result of the opposition proceedings, the Opposition Division can revoke a patent, maintain the patent as granted, or maintain the patent in an amended form. Most of the claims of European patent EP-2,800,811 B1 were maintained without amendment by the Opposition Division, but this decision is being appealed. In April 2021, the claims of European patent EP3,241,902 B1 were revoked in their entirety, and that decision is not being appealed. In February 2022, the claims of European patent EP3,401,400 B1 were maintained in amended form by the Opposition Division, and this decision is being appealed. If these patents are maintained by the Opposition Division with claims similar to those that are currently opposed, our ability to commercialize our product candidates may be adversely affected if we do not obtain a license to these patents. We may not be able to obtain any required license on commercially reasonable terms or at all. Even if we were able to obtain a license, it could be nonexclusive, thereby giving our competitors and other third parties access to the same technologies licensed to us, and it could require us to make substantial licensing and royalty payments. If we are unable to obtain a necessary license to a third-party patent on commercially reasonable terms, we may be unable to commercialize our base editing platform technology or product candidates or such commercialization efforts may be significantly delayed, which could in turn significantly harm our business.

Numerous other patents and patent applications have been filed by other third parties directed to gene editing, guide nucleic acids, PAM sequence variants, split inteins, Cas12b or gene editing in the context of immune therapy or chimeric antigen receptors.

Because of the large number of patents issued and patent applications filed in our field, third parties may allege they have patent rights encompassing our product candidates, technologies or methods. Third parties may assert that we are employing their proprietary technology without authorization and may file patent infringement claims or lawsuit against us, and if we are found to infringe such third-party patents, we may be required to pay damages, cease commercialization of the infringing technology, or obtain a license from such third parties, which may not be available on commercially reasonable terms or at all.

Our ability to commercialize our product candidates in the United States and abroad may be adversely affected if we cannot obtain a license on commercially reasonable terms to relevant third-party patents that cover our product candidates, delivery platform technology or base editing platform technology. Even if we believe third-party intellectual property claims are without merit, there is no assurance that a court would find in our favor on questions of infringement, validity, enforceability, or priority. A court of competent jurisdiction could hold that these third-party patents are valid, enforceable, and infringed, which could materially and adversely affect our ability to commercialize any product candidates we may develop and any other product candidates or technologies covered by the asserted third-party patents. In order to successfully challenge the validity of any such U.S. patent in federal court, we would need to overcome a presumption of validity. As this burden is a high one requiring us to present clear and convincing evidence as to the invalidity of any such U.S. patent claim, there is no assurance that a court of competent jurisdiction would invalidate the claims of any such U.S. patent. If we are found to infringe a third party’s intellectual property rights, and we are unsuccessful in demonstrating that such patents are invalid or unenforceable, we could be required to obtain a license from such third party to continue developing, manufacturing, and marketing any product candidates we may develop and our technology. However, we may not be able to obtain any required license on commercially reasonable terms or at all. Even if we were able to obtain a license, it could be non-exclusive, thereby giving our competitors and other third parties access to the same technologies licensed to us, and it could require us to make substantial licensing and royalty payments. If we are unable to obtain a necessary license to a third-party patent on commercially reasonable terms, we may be unable to commercialize our base editing platform technology, delivery platform technology or product candidates or such commercialization efforts may be significantly delayed, which could in turn significantly harm our business. We also could be forced, including by court order, to cease developing, manufacturing, and commercializing the infringing technology or product candidates. In addition, we could be found liable for significant monetary damages, including treble damages and attorneys’ fees, if we are found to have willfully infringed a patent or other intellectual property right. Claims that we have misappropriated the confidential information or trade secrets of third parties could have a similar material adverse effect on our business, financial condition, results of operations, and prospects.

Defense of third-party claims of infringement of misappropriation, or violation of intellectual property rights involves substantial litigation expense and would be a substantial diversion of management and employee time and resources from our business. Some third parties may be able to sustain the costs of complex patent litigation more effectively than we can because they have substantially greater resources. In addition, any uncertainties resulting from the initiation and continuation of any litigation could have a material adverse effect on our ability to raise the funds necessary to continue our operations or could otherwise have a material adverse effect on our business, financial condition, results of operations and prospects. There could also be public announcements of the results of hearings, motions, or other interim proceedings or developments, and if securities analysts or investors perceive these results to be negative, it could have a substantial adverse effect on the price of our common stock. Any of the foregoing events could have a material adverse effect on our business, financial condition, results of operations and prospects.

We contract with third parties for the manufacture and supply of materials for our research programs, preclinical studies and clinical trial and expect to continue to do so for at least a portion of our future research programs, preclinical studies and clinical trials and for commercialization of any product candidates that we may develop. This reliance on third parties increases the risk that we will not have sufficient quantities of such materials, product candidates, or any medicines that we may develop and commercialize, or that such supply will not be available to us at an acceptable cost, which could delay, prevent, or impair our development or commercialization efforts.

We currently rely on third-parties for the manufacture and supply of materials for preclinical studies and clinical trials, and may continue to do so for at least a portion of our future research programs, preclinical studies, clinical testing and for commercial supply of any product candidates that we may develop and for which we or our collaborators obtain marketing approval. We do not have a long-term supply agreement with any of the third-party suppliers, and we purchase our required supply on an order-by-order basis.

While we have built a manufacturing facility designed to support manufacturing for our *ex vivo* cell therapy programs in hematology and oncology and *in vivo* non-viral delivery programs for liver diseases in Research Triangle Park, North Carolina, this facility is not yet capable of cGMP operations and we cannot be certain that we will be able to build out our internal manufacturing capacity, or on the timeliness we expect.

We may be unable to establish long-term supply agreements with third-party suppliers or to do so on acceptable terms. Even if we are able to establish long-term supply agreements with third-parties, reliance on third-parties entails additional risks, including:

- the possible breach of the manufacturing or supply agreement by the third party;
- the possible termination or nonrenewal of the agreement by the third party at a time that is costly or inconvenient for us;
- reliance on the third party for regulatory compliance, quality assurance, safety, and pharmacovigilance and related reporting; and
- the possible inability of third-party suppliers to supply and/or transport materials, components and products to us in a timely manner as a result of disruptions to the global supply chain in connection with the COVID-19 pandemic or other factors.

Third-party suppliers may not be able to comply with cGMP regulations or other regulatory requirements outside the United States. Our failure, or the failure of third-party suppliers, to comply with applicable regulations could result in sanctions being imposed on us, including fines, injunctions, civil penalties, delays, suspension or withdrawal of approvals, license revocations, seizures or recalls of product candidates or medicines, operating restrictions, and criminal prosecutions, any of which could significantly and adversely affect supplies of our medicines and harm our business, financial condition, results of operations, and prospects.

For example, we rely on various CROs to obtain NHPs for use in preclinical development work, including for BEAM-301 and BEAM-302. In February 2023, Charles River Laboratories, or Charles River, one of our primary suppliers of NHPs, announced it received a subpoena from the United States Department of Justice with respect to its importation of NHPs from Cambodia. Charles River further announced that it has voluntarily suspended NHP shipments from Cambodia at this time. While we believe we currently have access to a supply of NHPs adequate for conducting our IND-enabling studies for BEAM-301 and BEAM-302, such supply may nevertheless be adversely affected by supply chain limitations. If we are unable to secure adequate supply of NHPs from Charles River or other CROs, or the shortage of NHPs causes the price of NHPs to rise substantially, certain of our preclinical development efforts will be delayed, and the cost of conducting discovery projects and preclinical development activities may substantially increase. Such delays or cost increases could materially adversely affect our discovery and preclinical development activities and our business.

Any medicines that we develop may compete with other product candidates and products for access to manufacturing facilities or supplies. There are a limited number of manufacturers that operate under cGMP regulations and that might be capable of manufacturing drug components and drug product necessary for gene editing. Any performance failure on the part of our existing or future suppliers could delay preclinical or clinical development or marketing approval. We do not currently have arrangements in place for redundant supply of all drug components and drug products necessary for our gene editing product candidates. If any one of our current contract manufacturers or suppliers cannot perform as agreed, we may be required to replace that manufacturer or supplier.

Although we believe that there are several potential alternative suppliers to support any product candidates we may develop, we may incur added costs and delays in identifying and qualifying any such replacement.

Our current and anticipated future dependence upon others for the manufacture of any product candidates we may develop may adversely affect our future profit margins and our ability to commercialize any medicines that receive marketing approval on a timely and competitive basis.

If we experience delays or difficulties in the enrollment or treatment of patients in clinical trials, our receipt of necessary regulatory approvals could be delayed or prevented.

We or our collaborators may not be able to initiate or continue clinical trials for any product candidates we identify or develop if we are unable to locate, enroll, and treat a sufficient number of eligible patients in these trials as required by the FDA, the EMA or other analogous regulatory authorities outside the United States, or as needed to provide appropriate statistical power for a given trial. Enrollment may be particularly challenging for some of the rare genetically defined diseases we are targeting in our most advanced programs, as well as for some of our product candidates for pediatric populations, due to a number of factors, including small patient populations as well as screening and testing requirements that limit patient eligibility. In addition, if patients are unwilling to participate in our base editing trials because of negative publicity from adverse events related to the biotechnology, gene therapy, or gene editing fields, competitive clinical trials for similar patient populations, clinical trials in competing products, or for other reasons, the timeline for recruiting patients, conducting studies, and obtaining regulatory approval of any product candidates we may develop may be delayed. Moreover, some of our competitors currently and may in the future have ongoing clinical trials for product candidates that treat the same indications as product candidates we are developing and may develop in the future, and patients who would otherwise be eligible for our clinical trials may instead enroll in clinical trials of our competitors' product candidates. Treatment of enrolled patients may also be delayed or prevented due to a number of factors, including the complexity of our trials. For example, our BEACON clinical trial requires patients to undergo mobilization procedures to harvest stem cells for editing and transplant. Patients have in the past and may in the future require multiple rounds of mobilization, which would delay treatment. Furthermore, due to the requirement to include sentinel cohorts and staggered treatment protocols in certain of our trials, such as our BEACON trial, any delay in treating one patient may cause delays in treating others.

Clinical trial patient enrollment and treatment is also affected by other factors, including:

- severity of the disease under investigation;
- size of the patient population and process for identifying patients;
- design of the trial protocol;
- availability and efficacy of approved medications for the disease under investigation;
- availability of genetic testing for potential patients;
- ability to obtain and maintain patient informed consent;
- risk that enrolled patients will drop out before completion of the trial;
- eligibility and exclusion criteria for the trial in question;
- perceived risks and benefits of the product candidate under trial;
- perceived risks and benefits of base editing as a therapeutic approach;
- efforts to facilitate timely enrollment in clinical trials;
- patient referral practices of physicians;
- ability to monitor patients adequately during and after treatment; and
- proximity and availability of clinical trial sites for prospective patients, especially for those conditions which have small patient pools.

Our ability to successfully initiate, enroll, and complete a clinical trial in any foreign country is subject to numerous risks unique to conducting business in foreign countries, including:

- difficulty in establishing or managing relationships with contract research organizations, or CROs, and physicians;
- different standards for the conduct of clinical trials;
- different standard-of-care for patients with a particular disease;

- difficulty in locating qualified local consultants, physicians, and partners; and
- potential burden of complying with a variety of foreign laws, medical standards, and regulatory requirements, including the regulation of pharmaceutical and biotechnology products and treatment and of gene editing technologies.

Enrollment or treatment delays in our clinical trials may result in increased development costs for any product candidates we may develop, which would cause the value of our company to decline and limit our ability to obtain additional financing. If we or our collaborators have difficulty enrolling or treating a sufficient number of patients to conduct our clinical trials as planned, we may need to delay, limit, or terminate ongoing or planned clinical trials, any of which would have an adverse effect on our business, financial condition, results of operations, and prospects.

Item 5. Other Information.

Director and Officer Trading Arrangements

The following table describes for the quarterly period covered by this report each trading arrangement for the sale or purchase of Company securities adopted or terminated by our directors and officers that is either (1) a contract, instruction or written plan intended to satisfy the affirmative defense conditions of Rule 10b5-1(c), or a "Rule 10b5-1 trading arrangement," or (2) a "non-Rule 10b5-1 trading arrangement" (as defined in Item 408(c) of Regulation S-K):

Name *(Title)*	**Action Taken *(Date of Action)***	**Type of Trading Arrangement**	**Nature of Trading Arrangement**	**Duration of Trading Arrangement**	**Aggregate Number of Securities**
John Evans *(Chief Executive Officer)*	Adoption *(June 29, 2023)*	Rule 10b5-1 trading arrangement	Sale	Until October 1, 2024, or such earlier date upon which all transactions are completed or expire without execution.	Up to 240,000 shares
John Evans *(Chief Executive Officer)*	Adoption *(May 19, 2023)*	Durable Rule 10b5-1 trading arrangement for sell-to-cover transactions relating to all RSU equity awards that have been or may be granted	Sale	Until final settlement of any covered RSU	Indeterminable[(1)]
Terry-Ann Burrell *(Chief Financial Officer)*	Adoption *(May 19, 2023)*	Durable Rule 10b5-1 trading arrangement for sell-to-cover transactions relating to all RSU equity awards that have been or may be granted	Sale	Until final settlement of any covered RSU	Indeterminable[(1)]
Giuseppe Ciaramella *(President)*	Adoption *(May 23, 2023)*	Durable Rule 10b5-1 trading arrangement for sell-to-cover transactions relating to all RSU equity awards that have been or may be granted	Sale	Until final settlement of any covered RSU	Indeterminable[(1)]
Christine Bellon *(Chief Legal Officer)*	Adoption *(June 26, 2023)*	Rule 10b5-1 trading arrangement	Sale	Until May 10, 2024, or such earlier date upon which all transactions are completed or expire without execution.	Up to 10,000 shares
Christine Bellon *(Chief Legal Officer)*	Adoption *(May 19, 2023)*	Durable Rule 10b5-1 trading arrangement for sell-to-cover	Sale	Until final settlement of any covered RSU	Indeterminable[(1)]

		transactions relating to all RSU equity awards that have been or may be granted			
Amy Simon *(Chief Medical Officer)*	Adoption *(June 28, 2023)*	Rule 10b5-1 trading arrangement	Sale	Until September 30, 2024, or such earlier date upon which all transactions are completed or expire without execution.	Up to 140,238 shares
Amy Simon *(Chief Medical Officer)*	Adoption *(May 19, 2023)*	Durable Rule 10b5-1 trading arrangement for sell-to-cover transactions relating to all RSU equity awards that have been or may be granted	Sale	Until final settlement of any covered RSU	Indeterminable[(1)]

(1) The number of shares subject to covered restricted stock units ("RSUs") that will be sold to satisfy applicable tax withholding obligations upon vesting is unknown as the number will vary based on the extent to which vesting conditions are satisfied, the market price of the Company's common stock at the time of settlement and the potential future grant of additional RSUs subject to this arrangement. This trading arrangement, which applies to RSUs whether vesting is based on the passage of time and/or the achievement of performance goals, provides for the automatic sale of shares that would otherwise be issuable on each settlement date of a covered RSU in an amount sufficient to satisfy the applicable withholding obligation, with the proceeds of the sale delivered to the Company in satisfaction of the applicable withholding obligation.

Item 6. Exhibits.

Exhibit Number	Description of Exhibit	Incorporated by Reference				Filed Herewith
		Form	File Number	Date of Filing	Exhibit Number	
3.1	Fourth Amended Certificate of Incorporation of Beam Therapeutics Inc.	8-K	001-39208	02/11/2020	3.1	
3.2	Second Amended and Restated Bylaws of Beam Therapeutics Inc.	10-K	001-39208	02/28/2023	3.2	
10.1	Amendment No. 2 to Sales Agreement, dated May 10, 2023, by and between Beam Therapeutics Inc. and Jefferies LLC	8-K	001-39208	05/10/2023	1.1	
31.1	Certification of Principal Executive Officer 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.					X
31.2	Certification of Principal Financial Officer 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.					X
32.1	Certification of Principal Executive Officer Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.					X
32.2	Certification of Principal Financial Officer Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.					X
101.INS	XBRL Instance Document - the instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document					X
101.SCH	Inline XBRL Taxonomy Extension Schema Document					X
101.CAL	Inline XBRL Taxonomy Calculation Linkbase Document					X
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase Document					X
101.LAB	Inline XBRL Taxonomy Label Linkbase Document					X
101.PRE	Inline XBRL Taxonomy Presentation Linkbase Document					X
104	Cover Page Interactive Data File (embedded within the Inline XBRL document)					X

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.

BEAM THERAPEUTICS INC.

Date: August 8, 2023

By: /s/ John Evans

John Evans
Chief Executive Officer
(Principal executive officer)

Date: August 8, 2023

By: /s/ Terry-Ann Burrell

Terry-Ann Burrell
Chief Financial Officer and Treasurer
(Principal financial and accounting officer)

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, John Evans, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Beam Therapeutics Inc.;

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

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

4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) 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 8, 2023

By: /s/ John Evans

John Evans
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, Terry-Ann Burrell, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Beam Therapeutics Inc.;

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

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

4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) 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 8, 2023

By: /s/ Terry-Ann Burrell

Terry-Ann Burrell
Chief Financial Officer
(Principal financial and accounting officer)

Exhibit 32.1

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

In connection with this Quarterly Report of Beam Therapeutics Inc. (the "Company") on Form 10-Q for the period ending June 30, 2023 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I certify, pursuant to 18 U.S.C. § 1350, as adopted pursuant to § 906 of the Sarbanes-Oxley Act of 2002, that:

(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 8, 2023

By: /s/ John Evans

John Evans
Chief Executive Officer
(Principal executive officer)

Exhibit 32.2

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

In connection with this Quarterly Report of Beam Therapeutics Inc. (the "Company") on Form 10-Q for the period ending June 30, 2023 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I certify, pursuant to 18 U.S.C. § 1350, as adopted pursuant to § 906 of the Sarbanes-Oxley Act of 2002, that:

(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 8, 2023

By: /s/ Terry-Ann Burrell

Terry-Ann Burrell
Chief Financial Officer
(Principal financial and accounting officer)