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

FORM 10-Q

(Mark One)

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

For the quarterly period ended September 30, 2018

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: 001-38662

SUTRO BIOPHARMA, INC.

(Exact Name of Registrant as Specified in its Charter)

Delaware	**47-0926186**
(State or other jurisdiction of incorporation or organization)	**(I.R.S. Employer Identification No.)**
310 Utah Avenue, Suite 150 South San Francisco, California	**94080**
(Address of principal executive offices)	**(Zip Code)**

Registrant's telephone number, including area code: (650) 392-8412

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

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

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

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

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

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

As of November 9, 2018, the registrant had 22,848,184 shares of common stock, $0.001 par value per share, outstanding.

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PART I—FINANCIAL INFORMATION

Item 1. Financial Statements.

Sutro Biopharma, Inc.
Condensed Balance Sheets
(In thousands, except share and per share amounts)

	September 30, 2018 (Unaudited)	December 31, 2017 (See Note 2)
Assets		
Current assets:		
Cash and cash equivalents	$ 41,353	$ 22,020
Marketable securities	81,597	–
Accounts receivable, net (including amounts from related parties of $1,695 and $784 as of September 30, 2018 and December 31, 2017, respectively)	2,443	1,624
Prepaid expenses and other current assets	1,979	1,985
Total current assets	127,372	25,629
Property and equipment, net	11,673	13,997
Other long-term assets	5,966	1,128
Restricted cash	15	15
Total assets	$ 145,026	$ 40,769
Liabilities, Redeemable Convertible Preferred Stock, and Stockholders' Deficit		
Current liabilities:		
Accounts payable	$ 4,594	$ 2,902
Accrued compensation	4,085	3,639
Deferred revenue—current	24,229	10,709
Debt—current	3,182	14,634
Other current liabilities	815	72
Total current liabilities	36,905	31,956
Deferred revenue, non-current	48,805	13,159
Deferred rent	473	428
Redeemable convertible preferred stock warrant liability	867	1,708
Debt—non-current	11,500	–
Other noncurrent liabilities	664	14
Total liabilities	99,214	47,265
Commitments and Contingencies		
Redeemable convertible preferred stock, $0.001 par value — 498,070,991 and 177,082,393 shares authorized as of September 30, 2018 and December 31, 2017, respectively; 493,615,703 and 173,750,421 shares issued and outstanding as of September 30, 2018 and December 31, 2017, respectively; aggregate liquidation preference of $188,639 as of September 30, 2018	187,246	102,505
Stockholders' deficit:		
Common stock, $0.001 par value — 818,000,000 and 271,000,000 shares authorized as of September 30, 2018 and December 31, 2017, respectively; 485,097 and 465,330 shares issued and outstanding as of September 30, 2018 and December 31, 2017, respectively	–	–
Note receivable from stockholder	–	(208)
Additional paid-in-capital	7,428	6,218
Accumulated other comprehensive loss	(27)	–
Accumulated deficit	(148,835)	(115,011)
Total stockholders' deficit	(141,434)	(109,001)
Total liabilities, redeemable convertible preferred stock, and stockholders' deficit	$ 145,026	$ 40,769

See accompanying notes to unaudited interim condensed financial statements.

Sutro Biopharma, Inc.
Condensed Statements of Operations
(Unaudited)
(In thousands, except share and per share amounts)

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2018	2017	2018	2017
Revenue:				
Collaboration revenue (including amounts from related parties of $5,174 and $8,529 during the three and nine months ended September 30, 2018, and $15,754 and $42,292 during the three and nine months ended September 30, 2017)	$ 6,924	$ 17,499	$ 13,955	$ 47,701
Other revenue—related parties	912	–	5,378	–
Total revenue	7,836	17,499	19,333	47,701
Operating expenses				
Research and development	12,642	13,669	39,475	39,499
General and administrative	5,351	4,895	13,806	12,306
Total operating expenses	17,993	18,564	53,281	51,805
Loss from operations	(10,157)	(1,065)	(33,948)	(4,104)
Interest income	403	62	483	192
Interest expense	(415)	(235)	(1,199)	(235)
Other income (expense), net	(68)	(180)	840	(197)
Net loss	$ (10,237)	$ (1,418)	$ (33,824)	$ (4,344)
Net loss per share, basic and diluted	$ (21.26)	$ (3.14)	$ (71.06)	$ (9.77)
Weighted-average shares used in computing net loss per share	481,613	451,550	476,023	444,594

See accompanying notes to unaudited interim condensed financial statements.

Sutro Biopharma, Inc.
Condensed Statements of Comprehensive Loss
(Unaudited)
(In thousands)

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2018	2017	2018	2017
Net loss	$ (10,237)	$ (1,418)	$ (33,824)	$ (4,344)
Other comprehensive income:				
Unrealized gain (loss) on available-for-sale securities	(27)	5	(27)	16
Comprehensive loss	$ (10,264)	$ (1,413)	$ (33,851)	$ (4,328)

See accompanying notes to unaudited interim condensed financial statements.

Sutro Biopharma, Inc.
Condensed Consolidated Statements of Cash Flows
(Unaudited)
(In thousands)

	Nine Months Ended September 30,	
	2018	**2017**
Cash flows from operating activities:		
Net loss	$ (33,824)	$ (4,344)
Adjustments to reconcile net loss to net cash provided by (used in) operating activities:		
Depreciation and amortization	3,404	3,796
Amortization of premium (accretion of discount) on marketable securities	(166)	116
Stock-based compensation	802	1,126
Revaluation of SutroVax option liability	48	75
Revaluation of redeemable convertible preferred stock warrant liability	(839)	186
Accretion of debt discount	119	24
Loss on disposal of property and equipment	35	87
Other revenue	140	–
Changes in operating assets and liabilities:		
Accounts receivable	(819)	(10,279)
Prepaid expenses and other current assets	(901)	(302)
Accounts payable	(135)	178
Accrued compensation	446	(178)
Other liabilities	1,097	106
Deferred rent	45	56
Deferred revenue	49,166	(22,881)
Net cash provided by (used in) operating activities	18,618	(32,234)
Cash flows from investing activities:		
Purchases of marketable securities	(81,456)	(5,019)
Maturities of marketable securities	–	32,650
Sales of marketable securities	–	6,000
Purchases of property and equipment	(759)	(2,659)
Net cash provided by (used in) investing activities	(82,215)	30,972
Cash flows from financing activities:		
Proceeds from issuance of debt	–	15,000
Payments of debt issuance fees	–	(171)
Payments of deferred offering costs	(2,413)	(74)
Proceeds from payment of note receivable by stockholder	208	–
Proceeds from issuances of common stock upon exercise of warrants	2	–
Proceeds from issuances of common stock upon exercise of stock options	394	61
Proceeds from issuance of redeemable convertible preferred stock, net of issuance costs	84,739	–
Net cash provided by financing activities	82,930	14,816
Net increase in cash and cash equivalents	19,333	13,554
Cash, cash equivalents, and restricted cash—beginning of period	22,035	11,868
Cash, cash equivalents, and restricted cash—end of period	$ 41,368	$ 25,422
Supplemental disclosure of cash flow information:		
Cash paid for interest	$ 942	$ 184
Supplemental disclosure of non-cash investing and financing information:		
Vesting of early exercised shares	$ 14	$ 65
Purchase of property and equipment included in accounts payable	$ 610	$ 229
Deferred initial public offering costs included in accounts payable	$ 1,659	$ 85

See accompanying notes to unaudited interim condensed financial statements.

1. Organization and Principal Activities

Description of Business

Sutro Biopharma, Inc. (the "Company") is a clinical stage drug discovery, development and manufacturing company focused on leveraging its integrated cell-free protein synthesis and site-specific conjugation platform, XpressCF+™, to create a broad variety of optimally designed, next-generation protein therapeutics for cancer and autoimmune disorders. The Company was incorporated on April 21, 2003, and was formerly known as Fundamental Applied Biology, Inc. The Company is headquartered in South San Francisco, California.

The Company operates in one business segment, the development of biopharmaceutical products.

Initial Public Offering

On September 26, 2018, the Company's registration statements on Form S-1 (File No. 333-227103 and 333-227548) relating to its initial public offering ("IPO") of its common stock was declared effective by the Securities and Exchange Commission ("SEC") and the shares of its common stock began trading on the Nasdaq Global Market on September 27, 2018. The public offering price of the shares sold in the IPO was $15.00 per share. The IPO closed on October 1, 2018, pursuant to which the Company sold 5,667,000 shares of common stock, for gross proceeds of approximately $85.0 million. The Company received net proceeds from the IPO of approximately $74.4 million, after underwriting discounts, commissions and estimated offering expenses. In addition to the shares of common stock sold in the IPO, the Company concurrently sold in a private placement to Merck Sharp & Dohme Corp., a subsidiary of Merck & Co., Inc., Kenilworth, NJ, USA ("Merck"), 666,666 shares of common stock at the IPO offering price of $15.00 per share, for proceeds of approximately $10.0 million. Immediately prior to the completion of the IPO, all outstanding shares of redeemable convertible preferred stock converted into common stock.

Immediately prior to the completion of the IPO on October 1, 2018, all outstanding shares of redeemable convertible preferred stock were converted into 16,028,462 shares of common stock. Subsequent to the closing of the IPO, there were no shares of redeemable convertible preferred stock outstanding. The condensed financial statements as of September 30, 2018, including share and per share amounts, do not give effect to the IPO, or the conversion of the redeemable convertible preferred stock, as the IPO and such conversions were completed subsequent to September 30, 2018.

Reverse Stock Split

On September 14, 2018, the Company effected a reverse split of all shares of its common stock at a ratio of 36.3-for-1. Upon the effectiveness of the reverse stock split, (i) all shares of outstanding common stock were adjusted; (ii) the number of shares of common stock for which each outstanding option to purchase common stock is exercisable were adjusted; (iii) the exercise price of each outstanding option to purchase common stock were adjusted; (iv) the conversion ratio for each share of outstanding redeemable convertible preferred stock which is convertible into the Company's common stock was proportionately reduced; (v) the number of shares of common stock for which each outstanding warrant to purchase common stock is exercisable was proportionally decreased; (vi) the conversion ratio for each outstanding warrant to purchase redeemable convertible preferred stock which is convertible into warrants to purchase the Company's common stock after the offering was proportionally decreased; and (vii) the exercise price of each outstanding warrant was proportionally increased. All of the outstanding common stock share numbers (including shares of common stock subject to the Company's options, as converted for the outstanding redeemable convertible preferred stock shares and warrants), share prices, exercise prices and per share amounts contained in the financial statements have been retroactively adjusted in the financial statements to reflect this reverse stock split for all periods presented. The par value per share and the authorized number of shares of common stock and redeemable convertible preferred stock were not adjusted as a result of the reverse stock split.

Series E Redeemable Convertible Preferred Stock Split

In July 2018, the Company's board of directors approved an amendment to the Company's amended and restated certificate of incorporation to effect a 1-for-1.1940912491 split ("Split") of shares of the Company's Series E redeemable convertible preferred stock, which was effected on July 26, 2018. The par value and authorized shares of redeemable convertible preferred stock and the other outstanding shares of redeemable convertible preferred stock were not adjusted as a result of the Split. All of the outstanding Series E redeemable convertible preferred shares and per share information included in the accompanying financial statements have been adjusted to reflect the Split.

Liquidity

The Company has incurred significant losses and has negative cash flows from operations. As of September 30, 2018, there was an accumulated deficit of $148.8 million. Management expects to continue to incur additional substantial losses in the foreseeable future as a result of the Company's research and development activities.

As of September 30, 2018, the Company had unrestricted cash, cash equivalents and marketable securities of $123.0 million, which is available to fund future operations. The Company will need to raise additional capital to support the completion of its research and development activities. The Company's activities are subject to significant risks and uncertainties, including failing to secure additional funding to continue to operationalize the Company's current technology and to advance the development of its product candidates.

The Company believes that its unrestricted cash, cash equivalents and marketable securities as of September 30, 2018 will be sufficient for the Company to continue as a going concern for at least one year from the issuance date of its unaudited interim condensed financial statements.

In August 2017, the Company entered into a loan and security agreement with Oxford Finance LLC ("Oxford") and Silicon Valley Bank ("SVB") under which it borrowed $15.0 million (the "August 2017 Loan") (see Note 6). The August 2017 Loan provides that an event of default will occur if, among other triggers, there occurs any circumstances that could reasonably be expected to result in a material adverse effect on the Company's business, operations or condition, or on its ability to perform its obligations under the loan. The Company disclosed in its audited financial statements as of December 31, 2017 that the Company believed that there was substantial doubt about its ability to continue as a going concern given its continuing operating losses and its then current available capital resources, which could be deemed to be an event of default if such condition was considered to have a material adverse effect on the Company's business, operations or condition. As a result, the Company classified the entire debt balance as a current liability as of December 31, 2017 given that a determination of such an event of default was outside of the Company's control. Based on the available financial resources described above, as of September 30, 2018, the Company has classified $3.2 million of the outstanding debt balance as current and the remainder as non-current, which reflects the scheduled repayments under the August 2017 Loan.

2. Summary of Significant Accounting Policies

Basis of Presentation and Use of Estimates

The accompanying financial statements have been prepared in accordance with U.S. generally accepted accounting principles ("U.S. GAAP"). The preparation of financial statements in conformity with U.S. GAAP requires management to make estimates and assumptions that affect the amounts reported in the financial statements and accompanying notes. The Company bases its estimates on historical experience and market-specific or other relevant assumptions that it believes are reasonable under the circumstances. The amounts of assets and liabilities reported in the Company's balance sheets and the amount of expenses and income reported for each of the periods presented are affected by estimates and assumptions, which are used for, but are not limited to, determining research and development periods under multiple element arrangements, stock-based compensation expense, fair value of redeemable convertible preferred stock and warrant liabilities, fair value of common stock, income taxes and certain accrued liabilities. Actual results could differ from such estimates or assumptions.

Unaudited Interim Condensed Financial Statements

The interim condensed balance sheet as of September 30, 2018, the condensed statements of operations and comprehensive loss for the three and nine months ended September 30, 2018 and 2017, and the condensed statements of cash flows for the nine months ended September 30, 2018 and 2017 are unaudited. The unaudited interim condensed financial statements have been prepared on the same basis as the annual financial statements and, in the opinion of management, reflect all adjustments, which include only normal recurring adjustments, necessary to present fairly the Company's financial position as of September 30, 2018, its results of operations and comprehensive loss for the three and nine months ended September 30, 2018 and 2017, and cash flows for the nine months ended September 30, 2018 and 2017. The financial data and the other financial information contained in these notes to the condensed financial statements related to the three-month and nine-month periods are also unaudited. The results of operations for the three and nine months ended September 30, 2018 are not necessarily indicative of the results to be expected for the year ending December 31, 2018 or for any other future annual or interim period. The condensed balance sheet as of December 31, 2017 included herein was derived from the audited financial statements as of that date. These condensed financial statements should be read in conjunction with the Company's audited financial statements included in the prospectus dated September 26, 2018 that forms a part of the Company's registration statements on Form S-1 (File Nos 333-227103 and 333-227548), as filed with the SEC pursuant to Rule 424(b)(4) promulgated under the Securities Act of 1933, as amended.

Cash, Cash Equivalents, and Restricted Cash

The Company considers all highly liquid investments with original maturities of 90 days or less from the date of purchase to be cash equivalents.

Under certain lease and credit agreements, the Company has pledged cash and cash equivalents as collateral. Restricted cash related to such agreements was $15,000 as of both September 30, 2018 and December 31, 2017.

The following table provides a reconciliation of cash and cash equivalents, and restricted cash reported within the balance sheets that sum to the total of the same amounts shown in the statements of cash flows.

	September 30,	
	2018	2017
	(in thousands)	
Cash and cash equivalents	$ 41,353	$ 25,407
Restricted cash	15	15
Total cash, cash equivalents, and restricted cash shown in the statements of cash flows	$ 41,368	$ 25,422

Fair Value Measurements

Fair value is defined as the exchange price that would be received for an asset or paid to transfer a liability, or an exit price, in the principal or most advantageous market for that asset or liability in an orderly transaction between market participants on the measurement date, and establishes a fair value hierarchy that requires an entity to maximize the use of observable inputs, where available, and minimizes the use of unobservable inputs when measuring fair value. The Company determined the fair value of financial assets and liabilities using the fair value hierarchy that describes three levels of inputs that may be used to measure fair value, as follows:

Level 1—Quoted prices in active markets for identical assets and liabilities;

Level 2—Inputs other than Level 1 that are observable, either directly or indirectly, such as quoted prices for similar assets or liabilities, quoted prices in markets that are not active, or other inputs that are observable or can be corroborated by observable market data for substantially the full term of the assets or liabilities; and

Level 3—Unobservable inputs that are supported by little or no market activity and that are significant to the fair value of the assets or liabilities.

The carrying amounts of accounts receivable, prepaid expenses, accounts payable and accrued compensation approximate fair value due to the short-term nature of these items.

The fair value of the Company's financial assets and liabilities is measured on a recurring basis by level within the fair value hierarchy. See Note 3.

The fair value of the Company's outstanding loan (See Note 6) is estimated using the net present value of the payments, discounted at an interest rate that is consistent with market interest rate, which is a Level 2 input. The estimated fair value of the Company's outstanding loan approximates the carrying amount, as the loan bears a floating rate that approximates the market interest rate.

Deferred Offering Costs

The Company has deferred offering costs consisting of legal, accounting and other fees and costs directly attributable to the Company's IPO, which was completed on October 1, 2018. The deferred offering costs will be offset against the gross proceeds of the IPO. As of September 30, 2018 and December 31, 2017, $4.6 million and $0.5 million, respectively, of deferred offering costs were recorded within other long-term assets on the balance sheet.

Redeemable Convertible Preferred Stock Warrants

The Company accounts for its redeemable convertible preferred stock warrants as a liability, and they are recorded at their estimated fair value, because the warrants may conditionally obligate the Company to transfer assets at some point in the future. At the end of each reporting period, changes in the estimated fair value during the period are recorded in other income (expense), net in the statement of operations. The Company will continue to adjust the liability for changes in estimated fair value until the earlier of the expiration of the warrants, exercise of the warrants, or conversion of the redeemable convertible preferred stock warrants into common stock warrants upon the completion of a liquidation event, including the completion of an IPO, which occurred on October 1, 2018.

Revenue Recognition

Revenue is recognized when persuasive evidence of an arrangement exists, delivery has occurred or services have been rendered, the price is fixed or determinable and collectability is reasonably assured.

For multiple-element arrangements, each deliverable within a multiple-deliverable revenue arrangement is accounted for as a separate unit of accounting if both of the following criteria are met: the delivered item or items has value to the customer on a stand-alone basis; and (ii) for an arrangement that includes a general right of return relative to the delivered item, delivery or performance of the undelivered item is considered probable and substantially in management's control.

The Company recognizes revenue from milestone payments when: (i) the milestone event is substantive and its achievability has substantive uncertainty at the inception of the agreement, and the Company has completed its performance obligations related to the achievement of the milestone. Milestone payments are considered substantive if all of the following conditions are met: the milestone payment (a) is commensurate with either the Company's performance subsequent to the inception of the arrangement to achieve the milestone or the enhancement of the value of the delivered item or items as a result of a specific outcome resulting from the Company's performance subsequent to the inception of the arrangement to achieve the milestone, (b) relates solely to past performance, and (c) is reasonable relative to all of the deliverables and payment terms (including other potential milestone consideration) within the arrangement.

Determining whether and when these revenue recognition criteria have been satisfied often involves assumptions and judgments that can have a significant impact on the timing and amount of reported revenue. Changes in assumptions or judgments or changes to the elements in an arrangement could cause a material increase or decrease in the amount of revenue that is reported in a particular period.

Under certain collaborative arrangements, the Company is entitled to payments for certain research and development activities and for providing product and other related materials. The Company's policy is to account for such payments by its collaboration partners as collaboration revenue.

Research and Development

Research and development costs are expensed as incurred. Research and development expenses consist of costs incurred in performing research and development activities: salaries, employee benefits, laboratory supplies, outsourced research and development expenses, professional services and allocated facilities-related costs. Amounts incurred in connection with collaboration arrangements are also included as a research and development expense.

Nonrefundable advance payments for goods or services that will be used or rendered for future research and development activities are deferred and capitalized and recognized as an expense as the goods are delivered or the related services are performed.

For outsourced research and development expenses, such as professional fees payable to third parties for preclinical studies, clinical trials and research services, and other consulting costs, the Company estimates the expenses based on the services performed, pursuant to contracts with research institutions that conduct and manage preclinical studies, clinical trials and research services on its behalf. The Company estimates these expenses based on discussions with internal management personnel and external service providers as to the progress or stage of completion of services and the contracted fees to be paid for such services. If the actual timing of the performance of services or the level of effort varies from the original estimates, the Company will adjust the accrual accordingly. Payments made to third parties under these arrangements in advance of the performance of the related services by the third parties are recorded as prepaid expenses until the services are rendered.

Net Loss Per Share

Basic net loss per share is calculated by dividing the net loss by the weighted-average number of shares of common stock outstanding for the period, without consideration for potential dilutive common shares. Basic net loss per share is the same as diluted net loss per share as the inclusion of all potential dilutive common shares would have been anti-dilutive.

Recent Accounting Pronouncements

From time to time, new accounting pronouncements are issued by the Financial Accounting Standards Board ("FASB"), or other standard setting bodies and adopted by the Company as of the specified effective date. Unless otherwise discussed, the impact of recently issued standards that are not yet effective will not have a material impact on the Company's financial statements upon adoption. Under the Jumpstart Our Business Startups Act of 2012, as amended (the "JOBS Act"), the Company meets the definition of an emerging growth company, and has elected the extended transition period for complying with new or revised accounting standards pursuant to Section 107(b) of the JOBS Act.

New Accounting Pronouncements Not Yet Adopted

In May 2014, the FASB issued ASU No. 2014-09 (Topic 606), Revenue from Contracts with Customers. In August 2015, the FASB issued ASU No. 2015-14 (Topic 606), Revenue from Contracts with Customers: Deferral of the Effective Date, which delayed the effective date of ASU 2014-09 by one year. ASU 2014-09, as amended, became effective for public business entities for fiscal years beginning after December 15, 2017, and interim periods within those fiscal years. For entities other than public entities, the standard is effective for fiscal years beginning after December 15, 2018, and interim periods beginning after December 15, 2019. Early adoption is permitted. ASU 2014-09 also permits two methods of adoption: retrospectively to each prior reporting period presented (full retrospective method), or retrospectively with the cumulative effect of initially applying the guidance recognized at the date of initial application (the modified retrospective method). The Company is in the process of evaluating the effect this guidance will have on revenue recognition for its collaboration and license agreements.

The core principle of ASU 2014-09 is that an entity should recognize revenue when it transfers promised goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services. ASU 2014-09 defines a five-step process to achieve this core principle and, in doing so, it is possible more judgment and estimates may be required within the revenue recognition process than required under existing U.S. generally accepted accounting pronouncements. All of the Company's revenue is currently generated from up-front payments, research and development services, and milestone and contingent payments under its collaboration arrangements. The Company is currently evaluating its collaboration agreements to determine the impact of adopting ASU 2014-09, inclusive of available transitional methods, on its financial statements and related disclosures.

In January 2016, the FASB issued ASU 2016-01 (Topic 825), Recognition and Measurement of Financial Assets and Financial Liabilities, which will change how to recognize, measure, present and make disclosures about certain financial assets and financial liabilities. Under ASU 2016-01, if an entity designates a financial liability under the fair value option ("FVO") in accordance with ASC 825, the entity shall measure the financial liability at fair value with qualifying changes in fair value recognized in net income. The entity shall present separately in other comprehensive income the portion of the total change in the fair value of the liability that results from a change in the instrument-specific credit risk.

For public business entities, ASU 2016-01 is effective for fiscal years beginning after December 15, 2017, including interim periods within those fiscal years. For all other entities, the guidance is effective for fiscal years beginning after December 15, 2018, and interim periods within fiscal years beginning after December 15, 2019. All entities can early adopt the provision related to financial liabilities measured using the FVO in ASC 825 for financial statements of annual or interim periods that have not yet been issued or made available for issuance. The Company does not expect the adoption of this amendment will have a material impact on its financial statements.

In February 2016, the FASB issued Accounting Standards Update (ASU) No. 2016-02, *Leases* (Topic 842), ("ASC 842"). ASC 842 supersedes the lease recognition requirements in ASC 840, *Leases*. ASC 842 clarifies the definition of a lease and requires lessees to recognize right-of-use assets and lease liabilities for all leases, including those classified as operating leases under previous lease accounting guidance. The guidance is effective for nonpublic business entities for fiscal years and interim periods beginning after December 15, 2019, with early adoption permitted. Originally, entities were required to adopt ASU 2016-02 using a modified retrospective transition method. However, in July 2018, the FASB issued ASU 2018-11, *Leases* (Topic 842): Targeted Improvements, which provides entities with an additional transition method. Under ASU 2018-11, entities have the option of initially applying ASC 842 at the adoption date, rather than at the beginning of the earliest period presented, and recognizing the cumulative effect of applying the new standard as an adjustment to beginning retained earnings in the year of adoption while continuing to present all prior periods under previous lease accounting guidance. The Company expects to elect this transition method at the adoption date of January 1, 2020. The Company is currently evaluating the impact of adopting this guidance on the Company's financial statements. The Company currently expects that its operating lease commitments will be subject to the new standard and recognized as right-of-use assets and operating lease liabilities upon adoption of this standard, which will increase the total assets and total liabilities that it reports relative to such amounts prior to adoption.

In August 2016, the FASB issued ASU 2016-15 ("ASC Topic 230"), *Classification of Certain Cash Receipts and Cash Payments* . The new guidance clarifies the classification of certain cash receipts and cash payments in the statement of cash flows, including debt prepayment or extinguishment costs, settlement of contingent consideration arising from a business combination, insurance settlement proceeds, and distributions from certain equity method investees. ASU 2016-15 is effective for annual periods beginning after December 15, 2017. Early adoption is permitted. The Company is in the process of assessing the impact, if any, of this ASU on its financial statements. The Company does not expect that the adoption of this amendment will have a material impact on its financial statements.

In November 2018, the FASB issued ASU No. 2018-18, *Collaborative Arrangements (Topic 808), Clarifying the interaction between Topic 808 and Topic 606*, or ASU No. 2018-18. The amendments in ASU No. 2018-18 provide guidance on whether certain transactions between collaborative arrangement participants should be accounted for with revenue under Topic 606. For public business entities, the amendments in ASU No. 2018-18are effective for fiscal years beginning after December 15, 2019, and interim periods within those fiscal years. For all other entities, the amendments are effective for fiscal years beginning after December 15, 2020, and interim periods within fiscal years beginning after December 15, 2021. Early adoption is permitted. An entity may not adopt the amendments earlier than its adoption date of Topic 606. The Company is currently evaluating the effect of this new guidance on its financial statements.

3. Fair Value Measurements

The following table sets forth the fair value of the Company's financial assets and liabilities measured on a recurring basis by level within the fair value hierarchy:

	September 30, 2018			
	Total	Level 1	Level 2	Level 3
	(in thousands)			
Assets:				
Money market funds	$ 31,879	$ 31,879	$ –	$ –
Commercial paper	34,939	–	34,939	–
Corporate debt securities	15,774	–	15,774	–
Asset-backed securities	16,864	–	16,864	–
U.S. government agency securities	23,767	–	23,767	–
Total	$ 123,223	$ 31,879	$ 91,344	$ –
Liabilities:				
Redeemable convertible preferred stock warrant liability	$ 867	$ –	$ –	$ 867
Total	$ 867	$ –	$ –	$ 867

	December 31, 2017			
	Total	Level 1	Level 2	Level 3
	(in thousands)			
Assets:				
Money market funds	$ 6,578	$ 6,578	$ –	$ –
Commercial paper	7,689	–	7,689	–
Corporate debt securities	800	–	800	–
U.S. government agency securities	3,893	–	3,893	–
Total	$ 18,960	$ 6,578	$ 12,382	–
Liabilities:				
Redeemable convertible preferred stock warrant liability	$ 1,708	$ –	$ –	$ 1,708
Total	$ 1,708	$ –	$ –	$ 1,708

Where applicable, the Company uses quoted market prices in active markets for identical assets to determine fair value. This pricing methodology applies to Level 1 investments, which are composed of money market funds.

If quoted prices in active markets for identical assets are not available, then the Company uses quoted prices for similar assets or inputs other than quoted prices that are observable, either directly or indirectly. These investments are included in Level 2 and consist of commercial paper, corporate debt securities, and U.S. government agency securities. These assets are valued using market prices when available, adjusting for accretion of the purchase price to face value at maturity.

A financial instrument's categorization within the valuation hierarchy is based upon the lowest level of input that is significant to the fair value measurement. The Company's assessment of the significance of a particular input to the fair value measurement in its entirety requires management to make judgments and consider factors specific to the asset or liability.

In certain cases where there is limited activity or less transparency around inputs to valuation, securities are classified as Level 3 within the valuation hierarchy. Level 3 liabilities that are measured at estimated fair value on a recurring basis consist of the redeemable convertible preferred stock warrant liability. Refer to Note 8 for the valuation techniques used to measure fair value and a description of the inputs and the information used to develop the inputs to the valuation models.

Generally, increases or decreases in the fair value of the underlying redeemable convertible preferred stock would result in a directionally similar impact in the fair value measurement of the associated warrant liability. There were no transfers within the hierarchy during the nine months ended September 30, 2018 and 2017.

The following table sets forth a summary of the changes in the estimated fair value of the Company's redeemable convertible preferred stock warrant liability:

	Redeemable Convertible Preferred Stock Warrant Liability
	(in thousands)
Balance as of December 31, 2017	$ 1,708
Proceeds from issuances of common stock upon exercise of warrants	(2)
Changes in estimated fair value of warrant liability included in other income (expense), net	(839)
Balance as of September 30, 2018	$ 867

4. Cash Equivalents and Marketable Securities

Cash equivalents and marketable securities consisted of the following:

	September 30, 2018			
	Amortized Cost Basis	Unrealized Gains	Unrealized Losses	Fair Value
	(in thousands)			
Money market funds	$ 31,879	$ –	$ –	$ 31,879
Commercial paper	34,939	–	–	34,939
Corporate debt securities	15,781	1	(8)	15,774
Asset-based securities	16,876	–	(12)	16,864
U.S. government agencies	23,776	–	(9)	23,767
Total	123,251	1	(29)	123,223
Less amounts classified as cash equivalents	(41,626)	–	–	(41,626)
Total marketable securities	$ 81,625	$ 1	$ (29)	$ 81,597

	December 31, 2017			
	Amortized Cost Basis	Unrealized Gains	Unrealized Losses	Fair Value
	(in thousands)			
Money market funds	$ 6,578	$ –	$ –	$ 6,578
Commercial paper	7,689	–	–	7,689
Corporate debt securities	800	–	–	800
U.S. government agencies	3,893	–	–	3,893
Total	18,960	–	–	18,960
Less amounts classified as cash equivalents	(18,960)	–	–	(18,960)
Total marketable securities	$ –	$ –	$ –	$ –

All marketable securities as of September 30, 2018 had maturities of less than one year.

5. Collaboration Agreements and Supply Agreements

The Company has recognized revenue as follows:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2018	2017	2018	2017
	(in thousands)		(in thousands)	
Collaboration revenue:				
Celgene Corporation ("Celgene")—related party:				
Amortization of up-front payment	$ 1,655	$ 2,642	$ 4,912	$ 16,355
Research and development services	5	–	103	–
Milestones and contingent payments	–	13,112		25,937
Total	1,660	15,754	5,015	42,292
Merck Sharp & Dohme Corporation ("Merck")—related party:				
Amortization of up-front payment	2,818	–	2,818	–
Research and development services	696	–	696	–
Total	3,514	–	3,514	–
Merck KGaA, Darmstadt, Germany (operating in the United States and Canada under the name "EMD Serono"):				
Amortization of up-front payment	1,038	1,030	3,104	3,090
Research and development services	712	715	2,322	2,319
Total	1,750	1,745	5,426	5,409
Total collaboration revenue	$ 6,924	$ 17,499	$ 13,955	$ 47,701
Other revenue—related parties:				
Celgene Corporation:				
Development and manufacturing services and clinical product supply	$ 330	$ –	$ 3,894	$ –
SutroVax:				
Supply and other	582	–	1,484	–
Total other revenue—related parties	$ 912	$ –	$ 5,378	$ –
Total revenue	$ 7,836	$ 17,499	$ 19,333	$ 47,701

2014 Celgene Agreement

In September 2014, the Company signed a Collaboration and License Agreement with Celgene (the "2014 Celgene Agreement") to discover and develop bispecific antibodies and/or antibody-drug conjugates ("ADCs"), focused primarily on the field of immuno-oncology, using the Company's proprietary integrated cell-free protein synthesis platform, XpressCF+™.

Upon signing the 2014 Celgene Agreement, the Company received an up-front, nonrefundable payment totaling $83.1 million. The Company was recognizing revenues from the up-front payment ratably over an approximate three-year period starting in September 2014.

In March 2015, the Company received a $15.0 million contingent payment ("March 2015 payment") from Celgene under the 2014 Celgene Agreement that provided Celgene a right to access certain of the Company's technology for use in conjunction with certain Celgene intellectual property. In June 2016, the Company received a $25.0 million milestone ("June 2016 payment") upon completion of certain preclinical activities. The March 2015 and June 2016 payments were being recognized as revenue over the remaining portion of the estimated period of the research term prior to entering into the 2017 Celgene Agreement.

2017 Celgene Agreement

In August 2017, the Company entered into the 2017 Celgene Agreement to refocus its 2014 Celgene Agreement on four programs that are advancing through preclinical development, including an ADC program targeting B cell maturation antigen.

Upon signing of the 2017 Celgene Agreement, the Company received an option fee payment of $12.5 million in August 2017 and is entitled to receive a second option fee payment of $12.5 million following the first investigational new drug ("IND") clearance, if any, for one of the four programs, if Celgene desires to maintain its option to acquire the U.S. rights to develop and commercialize a second collaboration program to reach IND status. If Celgene exercises its option to acquire from the Company U.S. rights to a second collaboration program, it will make an option exercise fee payment to the Company, the amount of which depends on which program reaches IND status. The Company determined that the initial $12.5 million payment should be deferred and recognized over the entire potential period during which Celgene has an option to acquire worldwide rights to a second collaboration program. Consequently, the Company is recognizing revenue from such payment ratably over an approximate three-year period starting in August 2017 and ending in September 2020. In September 2017, the Company earned a $10.0 million milestone for certain manufacturing accomplishments, which payment was received from Celgene in October 2017. The entire $10.0 million amount was recognized as revenue when earned, as the Company had completed its performance obligations related to the achievement of the substantive milestone.

The Company evaluated the terms of the 2017 Celgene Agreement, relative to the 2014 Celgene Agreement, and determined the 2017 Celgene Agreement to be a material modification to the 2014 Celgene Agreement for financial reporting purposes. As a result, the Company determined that the remaining deferred revenue balance of $8.2 million as of the date of entering into the 2017 Celgene Agreement, related to Celgene payments to the Company under the 2014 Celgene Agreement, will also be recognized ratably over an approximate three-year period starting in August 2017 and ending in September 2020 (the "Celgene Agreements"). The Company has received and will be eligible to receive financial support for research and development services assigned to the Company by Celgene, based on an agreed-upon level of full-time equivalent personnel effort and related reimbursement rate, which will be recognized as revenue as the related reimbursable activities approved by Celgene and the Company are performed by the Company.

Under the terms of the 2017 Celgene Agreement, the Company is entitled to earn development and regulatory contingent payments for each of the four programs under the collaboration, and royalties on sales of any commercial products that may result from the 2017 Celgene Agreement. As of September 30, 2018, the Company is eligible to receive a potential future payment for manufacturing activities of $10.0 million, which is considered to be a substantive milestone for which the related payment will be recognized as revenue upon achievement. In addition, for licensed products for which Celgene holds worldwide rights, the Company is eligible to receive aggregate milestone and option fee payments of up to $295.0 million for certain licensed products and up to $393.7 million for certain other licensed products under the collaboration, if approved in multiple indications, and, depending on the licensed product, tiered royalties ranging from mid-single digits to low teen percentages on worldwide sales of any commercial products that may result from the 2017 Celgene Agreement. Additionally, for licensed products for which Celgene holds ex-U.S. rights, the Company will also be eligible to receive pre-commercial contingent payments and tiered royalties ranging from mid to high single digit percentages. The contingent payments under the 2017 Celgene Agreement are not considered to be substantive milestones because the receipt of such payments is based solely on the performance of Celgene.

Celgene may terminate the 2017 Celgene Agreement at any time with 120 days' prior written notice. Either the Company or Celgene has the right to terminate the 2017 Celgene Agreement based on the other party's uncured material breach, challenge of the validity and enforceability of intellectual property, or bankruptcy.

As of September 30, 2018 and December 31, 2017, there was $13.1 million and $18.0 million, respectively, of deferred revenue related to payments received by the Company under the Celgene Agreements.

As of September 30, 2018 and December 31, 2017, the Company had $0.3 million and $0.8 million, respectively, of receivables from Celgene related to the Celgene Agreements, which are included in accounts receivable on the balance sheet.

2018 Master Services Agreement

In March 2018, the Company entered into a Master Development and Clinical Manufacturing Services Agreement (the "Master Services Agreement") with Celgene, wherein Celgene requested the Company to provide development, manufacturing and supply chain management services, including clinical product supply. The consideration for the services is based on an agreed-upon level of full-time equivalent personnel effort and related reimbursement rate in addition to agreed-upon pricing for the clinical product supply.

For the three and nine months ended September 30, 2018, the Company earned $0.3 million and $3.9 million, respectively, in other revenue-related parties under the Master Services Agreement

2018 Merck Agreement

In July 2018, the Company entered into an Exclusive Patent License and Research Collaboration Agreement (the "2018 Merck Agreement") with Merck to jointly develop up to three research programs focusing on cytokine derivatives for cancer and autoimmune disorders.

Under the 2018 Merck Agreement, the Company received from Merck an upfront payment of $60.0 million in August 2018 for the identification of and the pre-clinical research and development of two target programs, with an option for Merck to engage the Company to continue these activities for a third program upon the payment of an additional amount. The Company identified multiple deliverables under the 2018 Merck Agreement, which include access to certain intellectual property rights, performance of research and development services, and joint project team participation. The Company considered the provisions of the multiple-element arrangement guidance in determining whether access to the intellectual property rights under the arrangement has stand-alone value. Based on the Company's expertise in applying its proprietary technology, the Company concluded that there is no stand-alone value of the intellectual property rights accessed by Merck. Consequently, the Company determined that the identified deliverables comprise a single unit of accounting, and the up-front cash payment was deferred and will be recognized over the relevant estimated period during which the Company has significant obligations to perform research and development services and participate in joint project team activities for Merck. Consequently, the Company is recognizing revenues from the up-front payment ratably over an estimated four-year period starting in July 2018. Revenue for research and development services under the 2018 Merck Agreement will be recognized as the related activities are performed by the Company.

The Company is also eligible to receive aggregate milestone payments of up to $1.6 billion, assuming the development and sale of all therapeutic candidates and all possible indications identified under the collaboration. If one or more products from each of the target programs are developed for non-oncology or a single indication, the Company will be eligible for reduced aggregate milestone payments. In addition, the Company is eligible to receive tiered royalties ranging from mid-single digit to low teen percentages on the worldwide sales of any commercial products that may result from the collaboration. Additionally, Merck purchased 74,794,315 shares of the Company's Series E redeemable convertible preferred stock at a price per share of $0.2674, resulting in gross proceeds of $20.0 million. Concurrent with the Company's IPO, which was completed on October 1, 2018, Merck purchased 666,666 shares of common stock at a price per share of $15.00, resulting in proceeds of approximately $10.0 million. Merck may terminate the Merck Agreement at any time with 60 days' prior written notice. Either the Company or Merck has the right to terminate the Merck Agreement based on the other party's uncured material breach or bankruptcy.

As of September 30, 2018, there was $57.2 million of deferred revenue related to payment received by the Company under the 2018 Merck Agreement. As of September 30, 2018, the Company had $0.8 million receivable from Merck related to the Merck Agreement, which is included in accounts receivable on the balance sheet.

EMD Serono Agreement

The Company signed a Collaboration Agreement and a License Agreement with EMD Serono in May 2014 and September 2014, respectively, which were entered into in contemplation of each other and therefore treated as a single agreement for accounting purposes. The Collaboration Agreement was terminated upon execution of the License Agreement (the "MDA Agreement"), which agreement is to develop ADCs for multiple cancer targets.

Upon signing the Collaboration Agreement, the Company received an up-front, nonrefundable, non-creditable payment totaling $10.0 million. Upon signing the MDA Agreement, the Company received an additional up-front, nonrefundable payment totaling $10.0 million and will receive financial support for research and development services to be provided by the Company, based on an agreed-upon level of full-time equivalent personnel effort and related reimbursement rate.

The Company is recognizing revenues from the up-front payments ratably over an estimated five-year period starting in June 2014. Revenue for research and development services under the MDA Agreement will be recognized as revenue as the related reimbursable activities approved by EMD Serono and the Company are performed by the Company.

The Company is eligible to receive up to $52.5 million for each product developed under the MDA Agreement, primarily from pre-commercial contingent payments. In addition, the Company is eligible to receive tiered royalties ranging from low-to-mid single digit percentages, along with certain additional one-time royalties, on worldwide sales of any commercial products that may result from the MDA Agreement. The MDA Agreement term expires on a product-by-product and country-by-country basis. Upon expiration, EMD Serono will have a fully paid-up, royalty-free, perpetual, and irrevocable non-exclusive license, with the right to grant sublicenses, under certain Company intellectual property rights. EMD Serono may terminate the MDA Agreement at any time with 90 days' prior written notice or upon the inability of the Company to provide EMD Serono access to a specified number of cancer drug targets. Either the Company or EMD Serono has the right to terminate the MDA Agreement based on the other party's uncured material breach or bankruptcy.

As of September 30, 2018 and December 31, 2017, there was $2.8 million and $5.9 million, respectively, of deferred revenue related to payments received by the Company under the MDA Agreement. As of September 30, 2018 and December 31, 2017, the Company had $0.7 million and $0.8 million, respectively, of receivables from EMD Serono related to the MDA Agreement, which are included in accounts receivable on the balance sheet.

SutroVax, Inc. Supply Agreement

In May 2018, the Company entered into a Supply Agreement (the "Supply Agreement") with SutroVax, Inc., ("SutroVax"), wherein SutroVax engaged the Company to supply extracts and custom reagents, as requested by SutroVax. The pricing is based on an agreed upon cost plus arrangement. For the three and nine months ended September 30, 2018, the Company recognized $0.6 million and $1.5 million, respectively, in other revenue-related parties under the Supply Agreement. As of September 30, 2018, the Company had $0.6 million receivable from SutroVax related to the Supply Agreement, which is included in accounts receivable on the balance sheet.

The Leukemia & Lymphoma Society, Inc.

In August 2018, the Company entered into a Research, Development and Commercialization Agreement (the "LLS Agreement") with The Leukemia & Lymphoma Society ("LLS"), under which LLS has agreed to contribute up to $6.0 million in clinical development funding for STRO-001, the Company's CD74-targeting ADC to treat relapsed and/or refractory multiple myeloma and non-Hodgkin lymphoma. The funding will be provided in installments based upon the achievement of funding milestones, with the initial payment of $0.5 million received by the Company upon execution of the LLS Agreement. As of September 30, 2018, the Company had received total payments from LLS of $1.0 million, which will be reflected as a reduction of research and development expenses over an estimated period ending in 2021, as eligible STRO-001 clinical development costs are incurred by the Company. In consideration for the funding to the Company under the LLS Agreement, the Company may be required to make payments to LLS based on pre-specified late-stage clinical development, regulatory and commercialization milestones and should the Company enter into certain transactions relating to STRO-001 with a third party. The Company will recognize such payments, if any, in the period they are incurred as the contingent payments are not an unconditional purchase obligation. The LLS Agreement terminates upon the earlier of (a) fulfillment of all payment obligations by both parties or (b) 12 years after the effective date. LLS may terminate the LLS Agreement at any time with 60 days' prior written notice. Either the Company or LLS has the right to terminate the LLS Agreement based on the other party's uncured material breach. As of September 30, 2018, there was approximately $1.0 million of other liabilities related to payments received by the Company under the LLS Agreement.

6. Loan and Security Agreement

In August 2017, the Company entered into a loan and security agreement with Oxford and SVB under which it borrowed $15.0 million (the "August 2017 Loan"). The loan is due in 30 monthly installments from March 2019 through its repayment in August 2021, with interest-only monthly payments until March 2019. If certain qualified funding events occur, the loan will be due in 24 monthly installments from September 2019 through its repayment in August 2021, with interest-only payments until September 2019. While the aforementioned qualified funding events occurred during the quarter ended September 30, 2018, the Company intends currently to commence repayment of the loan in March 2019.

The August 2017 Loan is secured by all assets of the Company, excluding intellectual property and certain other assets. The August 2017 Loan contains customary affirmative and restrictive covenants, including with respect to fundamental transactions, the incurrence of additional indebtedness, grant liens, pay any dividend or make any distributions to the Company's holders, make investments, merge or consolidate with any other person, or engage in transactions with its affiliates, but does not include any financial covenants. The loan agreement provides that an event of default will occur if, among other triggers, there occurs any circumstances that could reasonably be expected to result in a material adverse effect on the Company's business, operations or condition, or on its ability to perform its obligations under the loan. The loan agreement also includes customary representations and warranties, other events of default and termination provisions.

The Company disclosed in its audited financial statements as of December 31, 2017 that there was substantial doubt about its ability to continue as a going concern given its continuing operating losses and its current available capital resources, which could be deemed to be an event of default if such condition was considered to have a material adverse effect on the Company's business, operations or condition. As a result, the Company classified the entire debt balance as a current liability as of December 31, 2017 given that a determination of such an event of default is outside of the Company's control. As of September 30, 2018, the Company has classified $3.2 million of the outstanding debt balance as current and $11.5 million as non-current, which reflects the scheduled repayment terms under the August 2017 Loan.

The interest charges on the loan will be based on a floating rate that equals the greater of 7.39% or the sum of the 30-day U.S. Dollar London Interbank Offered Rate ("LIBOR") plus 6.40%. For the nine months ended September 2018, the average interest rate was 8.28%. In addition, the Company will make a final payment equal to 3.83% of the original principal amount of the loan, or $574,500, which will be accrued over the term of the loan using the effective-interest method. As of September 30, 2018, total interest expense accrued was $0.2 million.

In connection with the August 2017 Loan, the Company issued to Oxford and SVB a warrant to purchase 454,820 shares and 227,410 shares, respectively, of Series D-2 redeemable convertible preferred stock at an exercise price of $0.6596 per share (the "2017 Warrant"). If there is a subsequent convertible preferred stock or other senior equity securities financing with a per share price less than the Series D-2 redeemable convertible preferred per share price, then the warrant shall instead be to purchase such class of shares, based on the per share price of such. In May and July 2018, the Company raised a total of $85.4 million in funding through the sale and issuance of 319,305,718 shares of Series E redeemable convertible preferred stock, at $0.2674 per share. Given that the price per share of the Series E redeemable convertible preferred stock was less than the Series D-2 redeemable convertible preferred per share price, the 2017 Warrant converted into a warrant to purchase a total of 1,682,871 shares of Series E redeemable convertible preferred stock at an exercise price of $0.2674 per share. The warrants were exercisable from the date of issuance and have a 10-year term. The estimated fair value upon issuance of the 2017 Warrant based on Series D-2 redeemable convertible preferred stock was $329,000, which was recorded as redeemable convertible preferred stock warrant liability. The fair value of the warrant at the date of issuance was determined using an Option Pricing Method and was recorded as a redeemable convertible preferred stock warrant liability with an offset to debt discount on the associated borrowings on the Company's balance sheet. The debt discount is being amortized to interest expense over the repayment period of the loan using the effective-interest method.

During the three and nine months ended September 30, 2018, the Company recorded interest expense related to this loan and accretion of debt discount of $0.4 million and $1.2 million, respectively. During the three and nine months ended September 30, 2017, the Company recorded interest expense related to this loan and accretion of debt discount of $0.2 million and $0.2 million, respectively.

7. Related-Party Transactions

Related party transactions with Celgene, which owned 10.5% and 15.4% of the Company's outstanding equity interest as of September 30, 2018 and December 31, 2017, respectively, are described in Note 5.

Related party transactions with Merck, which owned 12.5% and 0% of the Company's outstanding equity interest as of September 30, 2018 and December 31, 2017, respectively, are described in Note 5.

Three directors of the Company have performed consulting services for the Company, which consulting services were terminated concurrently with the Company's IPO in September 2018. Subsequent to his appointment to the Company's Board of Directors, the Company paid to one of the directors $10,000 and $40,000 during the three and nine months ended September 30, 2018, respectively, and $15,000 and $45,000 in during the three and nine months ended September 30, 2017, respectively. Additionally, such director was granted options to purchase 9,805 shares of the Company's common stock from 2009 to 2015, at the then-current fair values of the common stock ranging from $4.36 to $11.98 per share, related to his consulting services, which vest ratably over four years. As of September 30, 2018, all of such shares were vested.

There were zero and $250,000 in transaction advisory fees during the nine months ended September 30, 2018 and 2017, respectively, paid to a firm of which such director is a managing executive, related to the Celgene A greements. Additional payments, based on a single digit percentage of any future payments, will be made to such transaction advisory firm upon receipt of future payments under the 2017 Celgene Agreement (see Note 5). In June 2018, the Company entered into a side letter to its consulting agreement with such director, pursuant to which the Company agreed to pay such director a one-time success fee of $400,000 within 30 days of the execution of a definitive collaboration agreement with a third-party pharmaceutical company. Following the execution of the 2018 Merck Agreement in July 2018, the Company paid such director $400,000. The Company terminated the consul ting agreement and side letter with such director prior to the completion of the Company's IPO.

The Company paid to the second director $5,000 and $20,000 during the three and nine months ended September 30, 2018, respectively, and $7,500, and $22,500 during the three and nine months ended September 30, 2017, respectively. Additionally, such director was granted an option to purchase 3,269 shares of the Company's common stock in September 2015 at the then-current fair value of the common stock, related to his consulting services, which vests ratably over four years.

The Company paid to the third director $5,000 and $20,000 during the three and nine months ended September 30, 2018, respectively, and $7,500 and $17,500 during the three and nine months ended September 30, 2017, respectively.

On August 30, 2010, the Company received a promissory note with recourse from its chief executive officer, which was used to purchase common stock. The principal amount of the note was approximately $0.2 million, which accrues interest at 0.53%, compounding semiannually. The note can be prepaid without penalty and is due on August 30, 2019. As of December 31, 2017, the outstanding balance was $0.2 million and the note and related interest receivable were recorded as a component of stockholders' deficit. The promissory note was paid in full by the chief executive officer in August 2018.

Investment in SutroVax, Inc. ("SutroVax")

In December 2013, the Company and Johnson & Johnson Innovation, through the Johnson & Johnson Development Corporation, provided initial co-funding for a new company, SutroVax. SutroVax leverages the Company's proprietary integrated cell-free protein synthesis platform, XpressCF+™, to develop novel vaccines for a broad range of disease targets. The Company had $584,000 and $34,000 in receivables due from SutroVax as of September 30, 2018 and December 31, 2017, respectively, which were included in accounts receivable on the condensed balance sheet.

As of September 30, 2018 and December 31, 2017, the Company held a 5.6% and 7.8% common stock ownership interest in SutroVax, respectively, on a fully-diluted basis, with a carrying value of $0 and was accounted for under the cost method.

SutroVax qualifies as a variable interest entity. However, the Company maintains only shared power to direct the activities that most significantly impact the performance of SutroVax. Therefore, the Company is not considered the primary beneficiary and consolidation is not required.

See Note 5, SutroVax, Inc. Supply Agreement for discussion of the supply arrangement entered into with SutroVax in May 2018 and related revenue recognized for the three months and nine months ended September 30, 2018.

In May 2018, the Company entered into amendments to the license agreement with SutroVax, which primarily clarified under certain limited future circumstances SutroVax's ability to manufacture extract pursuant to the license agreement. The Company received a warrant for the purchase of 100,000 shares of SutroVax preferred stock which was valued at $140,000. The value of warrants received has been recognized as other revenue-related parties during the nine months ended September 30, 2018 as there are no remaining deliverables under the license agreement.

8. Redeemable Convertible Preferred Stock

Redeemable Convertible Preferred Stock

In May, June and July 2018, the Company raised an aggregate total of $85.4 million in funding through the sale and issuance of 319,305,718 shares of Series E redeemable convertible preferred stock, at $0.2674 per share. The Series E redeemable convertible preferred stock per share price was less than the conversion price per share in each of the Company's prior redeemable convertible preferred stock financings, and therefore, each prior conversion price was lowered by applying a broad-based weighted average adjustment. With certain senior rights, preferences and privileges provided for the Series E redeemable convertible preferred stock, all prior series (Series A through Series D-2) of issued redeemable convertible preferred stock will be hereafter referred to collectively as the "Junior Preferred."

Redeemable convertible preferred stock, $0.001 par value, as of September 30, 2018 consisted of:

	Shares Authorized	Shares Issued and Outstanding	Original Issue Price Per Share	Carrying Value	Liquidation Preference
	(in thousands, except for share and per share amounts)				
Series A	3,503,692	3,503,692	$ 0.5900	$ 1,992	$ 2,067
Series B	24,515,966	24,345,936	0.8822	19,865	21,478
Series C	78,582,049	76,661,901	0.4797	38,036	36,775
Series C-2	8,338,892	8,338,892	0.5996	4,845	5,000
Series D	43,362,233	43,362,233	0.5996	25,900	26,000
Series D-2	18,779,561	18,097,331	0.6596	11,868	11,937
Series E	320,988,598	319,305,718	0.2674	84,739	85,382
Balance at September 30, 2018	498,070,991	493,615,703		$ 187,245	$ 188,639

Redeemable convertible preferred stock, $0.001 par value, as of December 31, 2017 consisted of:

	Shares Authorized	Shares Issued and Outstanding	Original Issue Price Per Share	Carrying Value	Liquidation Preference
	(in thousands, except for share and per share amounts)				
Series A	3,503,692	3,503,692	$ 0.5900	$ 1,992	$ 2,067
Series B	24,515,966	24,345,936	0.8822	19,865	21,478
Series C	78,582,049	76,102,337	0.4797	38,035	36,506
Series C-2	8,338,892	8,338,892	0.5996	4,845	5,000
Series D	43,362,233	43,362,233	0.5996	25,900	26,000
Series D-2	18,779,561	18,097,331	0.6596	11,868	11,937
Balance at December 31, 2017	177,082,393	173,750,421		$ 102,505	$ 102,988

The significant rights, preferences and privileges of the redeemable convertible preferred stock are as follows:

Redemption

At the election of the holders of a majority of the then-outstanding shares of preferred stock, voting together as a single class on an as-converted to common stock basis, the Company will redeem all outstanding shares of preferred stock in three equal annual installments commencing May 24, 2023, by paying in cash an amount per share equal to the original issuance prices of $0.59 per share of Series A redeemable convertible preferred stock, $0.8822 per share of Series B redeemable convertible preferred stock, $0.4797 per share of Series C redeemable convertible preferred stock, $0.5996 per share of Series C-2 redeemable convertible preferred stock, $0.5996 per share of Series D redeemable convertible preferred stock, $0.6596 per share of Series D-2 redeemable convertible preferred stock, and $0.2674 per share of Series E redeemable convertible preferred stock, plus 8% of the applicable original issuance prices per annum calculated from the original issuance date of each share of preferred stock. If funds legally available for redemption of the preferred stock are insufficient to pay such holders the full redemption prices, the Company will effect such redemption first to the holders of Series E redeemable convertible preferred stock, until the related redemption price has been paid in full, and second to the Junior Preferred holders, pro rata among such holders, based on a formula.

Additionally, all shares of preferred stock are redeemable in the event of a change in control or sale of substantially all of the assets of the Company. As certain redemption events are outside the control of the Company, all preferred stock amounts have been presented outside of stockholders' deficit.

The carrying value of the redeemable convertible preferred stock has not been accreted up to its redemption value as no redemption events are considered probable as of September 30, 2018.

Dividends

The holders of preferred stock are entitled to receive, when and as declared by the Board of Directors, dividends at the per annum rate of $0.0472 per share of Series A redeemable convertible preferred stock, $0.07056 per share of Series B redeemable convertible preferred stock, $0.03838 per share of Series C redeemable convertible preferred stock, $0.048 per share of Series C-2 redeemable convertible preferred stock, $0.048 per share of Series D redeemable convertible preferred stock, $0.0528 per share of Series D-2 redeemable convertible preferred stock, and $0.0214 per share of Series E redeemable convertible preferred stock, prior and in preference to any declaration or payment of a dividend to the common stockholders. Additionally, the holders of Series E redeemable convertible preferred stock are entitled to receive dividends prior and in preference to Junior Preferred holders and holders of common stock of the Company. Payment of any dividends to the Junior Preferred holders shall be on a pro rata, pari passu basis in proportion to the dividend rates set forth above for each series of Junior Preferred stock. Such dividends are not cumulative, and no right to such dividends shall accrue to holders of the preferred stock unless declared by the Board of Directors. Following payment of these dividends to the preferred stockholders, any additional dividends will be payable to the holders of the Company's common and preferred stock on an as-if-converted-to-common-stock basis. No dividends have been declared to date.

Liquidation

In the event of any liquidation, dissolution, or winding up of the Company, either voluntary or involuntary, the holders of Series E redeemable convertible preferred stock are entitled to receive any distribution of assets or surplus funds in an amount equal to the original issuance price of the Series E redeemable convertible preferred stock (as adjusted for stock splits, stock dividends or distributions, recapitalizations, and similar events) and all declared but unpaid dividends, if any, prior and in preference to Junior Preferred holders and holders of common stock of the Company. Junior Preferred holders shall be entitled to receive pro rata, prior and in preference to any distribution to the holders of the common stock, an amount equal to the original issuance prices of each series (in each case, as adjusted for stock splits, stock dividends or distributions, recapitalizations, and similar events) and all declared but unpaid dividends, if any.

After giving effect to the liquidation preferences noted above, all of the remaining assets of the Company shall be distributed to the holders of preferred stock and common stock pro rata based on the number of shares of common stock held by each such holder, treating, for this purpose, all such securities as if they had been converted to common stock immediately prior to the liquidation event. However, if the aggregate amount that the holders of preferred stock are entitled to receive exceeds two times the applicable original issuance prices per share for such series of preferred stock plus any dividends declared but unpaid thereon (the "Maximum Participation Amount"), each holder of preferred stock shall be entitled to receive upon such liquidation the greater of (i) the Maximum Participation Amount and (ii) the amount such holder would have received if all shares of such series of preferred stock had been converted into common stock immediately prior to the liquidation event.

Unless the holders of a majority of the then-outstanding shares of preferred stock, voting together as a single class on an as-converted to common stock basis, elect otherwise, any of the following events shall be treated as a liquidation: (i) any consolidation, merger, acquisition, or any other corporate reorganization in which the stockholders of the Company immediately prior to such event own less than 50% of the voting power of the surviving or successor entity or its parent immediately after such event; (ii) any transaction or series of related transactions in which in excess of 50% of the Company's voting power is transferred; or (iii) any sale, lease, transfer, exclusive license, or other disposition of all or substantially all of the assets of the Company.

Voting

Each share of redeemable convertible preferred stock is entitled to voting rights equivalent to the number of shares of common stock into which each share can be converted.

The holders of Series E redeemable convertible preferred stock are entitled to elect one director of the Company, the holders of Series C redeemable convertible preferred stock are entitled to elect two directors of the Company, and the holders of Series A redeemable convertible preferred stock and Series B redeemable convertible preferred stock are each entitled to elect one director of the Company. Additionally, holders of common stock are entitled to elect one director of the Company, and all stockholders can elect the balance of the total number of directors of the Company.

Conversion

The conversion price as of September 30, 2018 of each series of redeemable convertible preferred stock listed below is subject to adjustment upon certain dilutive events, including in the event the Company issues certain additional equity securities at a purchase price less than the current conversion price.

Each share of Series E redeemable convertible preferred stock shall be convertible, at the option of the holder thereof, into such number of fully paid and nonassessable shares of common stock as is determined by dividing $0.2674 by the Series E redeemable convertible preferred stock conversion price in effect at the time of conversion. The Series E redeemable convertible preferred stock conversion price as of September 30, 2018 is $0.2674 per share of common stock. The Series E redeemable convertible preferred stock conversion price is subject to adjustment upon certain dilutive events. As of October 1, 2018, each share of Series E redeemable convertible preferred stock did convert into common stock on a 1-for-0.0275 basis.

Each share of Series D-2 redeemable convertible preferred stock shall be convertible, at the option of the holder thereof, into such number of fully paid and nonassessable shares of common stock as is determined by dividing $0.6596 by the Series D-2 redeemable convertible preferred stock conversion price in effect at the time of conversion. The Series D-2 redeemable convertible preferred stock conversion price as of September 30, 2018 is $0.4336 per share of common stock. The Series D-2 redeemable convertible preferred stock conversion price is subject to adjustment upon certain dilutive events. As of October 1, 2018, each share of Series D-2 redeemable convertible preferred stock did convert into common stock on a 1-for-0.0419 basis.

Each share of Series D redeemable convertible preferred stock shall be convertible, at the option of the holder thereof, into such number of fully paid and nonassessable shares of common stock as is determined by dividing $0.5996 by the Series D redeemable convertible preferred stock conversion price in effect at the time of conversion. The Series D redeemable convertible preferred stock conversion price as of September 30, 2018 is $0.4081 per share of common stock. The Series D redeemable convertible preferred stock conversion price is subject to adjustment upon certain dilutive events. As of October 1, 2018, each share of Series D redeemable convertible preferred stock did convert into common stock on a 1-for-0.0405 basis.

Each share of Series C-2 redeemable convertible preferred stock shall be convertible, at the option of the holder thereof, into such number of fully paid and nonassessable shares of common stock as is determined by dividing $0.5996 by the Series D redeemable convertible preferred stock conversion price in effect at the time of conversion. The Series C-2 redeemable convertible preferred stock conversion price as of September 30, 2018 is $0.4081 per share of common stock. The Series C-2 redeemable convertible preferred stock conversion price is subject to adjustment upon certain dilutive events. As of October 1, 2018, each share of Series C-2 redeemable convertible preferred stock did convert into common stock on a 1-for-0.0405 basis.

Each share of Series C redeemable convertible preferred stock shall be convertible, at the option of the holder thereof, into such number of fully paid and nonassessable shares of common stock as is determined by dividing $0.4797 by the Series C redeemable convertible preferred stock conversion price in effect at the time of conversion. The Series C redeemable convertible preferred stock conversion price as of September 30, 2018 is $0.3573 per share of common stock. The Series C redeemable convertible preferred stock conversion price is subject to adjustment upon certain dilutive events. As of October 1, 2018, each share of Series C redeemable convertible preferred stock did convert into common stock on a 1-for-0.0370 basis.

Each share of Series B redeemable convertible preferred stock shall be convertible, at the option of the holder thereof, into such number of fully paid and nonassessable shares of common stock as is determined by dividing $0.8822 by the Series B redeemable convertible preferred stock conversion price in effect at the time of conversion. The Series B redeemable convertible preferred stock conversion price as of September 30, 2018 is $0.4203 per share of common stock. The Series B redeemable convertible preferred stock conversion price is subject to adjustment upon certain dilutive events. As of October 1, 2018, each share of Series B redeemable convertible preferred stock did convert into common stock on a 1-for-0.0578 basis.

Each share of Series A redeemable convertible preferred stock shall be convertible, at the option of the holder thereof, into such number of fully paid and nonassessable shares of common stock as is determined by dividing $0.59 by the Series A redeemable convertible preferred stock conversion price in effect at the time of conversion. The Series A redeemable convertible preferred stock conversion price as of September 30, 2018 is $0.3756 per share of common stock. The Series A redeemable convertible preferred stock conversion price is subject to adjustment upon certain dilutive events. As of October 1, 2018, each share of Series A redeemable convertible preferred stock did convert into common stock on a 1-for-0.0433 basis.

Warrants

During the period from 2008 to 2012, the Company issued various warrants for the purchase of redeemable convertible preferred stock in connection with debt financings and the issuance of redeemable convertible preferred stock.

In August 2017, the Company issued warrants to Oxford and SVB to purchase an aggregate of 682,230 shares of Series D-2 redeemable convertible preferred stock at an exercise price of $0.6596 per share in connection with the issuance of August 2017 Loan (see Note 6). If there is a subsequent convertible preferred stock or other senior equity securities financing with a per share price less than the Series D-2 redeemable convertible preferred per share price, then the warrant shall automatically convert to a warrant to purchase such class of shares, based on the per share price of such equity. Given that the price per share of the Series E redeemable convertible preferred stock described above was less than the price per share of the Series D-2 redeemable convertible preferred stock, the 2017 Warrant converted into a warrant to purchase a total of 1,682,871 shares of Series E redeemable convertible preferred stock at an exercise price of $0.2674 per share. The warrant is exercisable from the original date of issuance and has a 10-year term.

As of September 30, 2018 and December 31, 2017, the warrants outstanding and exercisable were as follows:

			Shares as of		Estimated Fair Value as of,	
Stock	Expiration Date	Exercise Price Per Share	September 30, 2018	December 31, 2017	September 30, 2018	December, 31 2017
			(in thousands except for share and per share amounts)			
Series B redeemable convertible preferred	June 2018	$ 0.8822	–	170,030	$ –	$ 116
Series C redeemable convertible preferred(1)	July 2020 – November 2021	$ 0.4797	1,920,148	2,479,712	336	1,263
Series D-2 redeemable convertible preferred	August 2027	$ 0.6596	–	682,230	–	329
Series E redeemable convertible preferred(1)	August 2027	$ 0.2674	1,682,871	–	531	–
Total			3,603,019	3,331,972	$ 867	$ 1,708

(1) On October 1, 2018, 1,232,220 shares of the Series C redeemable convertible preferred warrants will be canceled, and the remaining 687,928 shares will be converted to warrants to purchase common stock on a 1-for-0.0370 basis. All Series E redeemable convertible preferred warrants will be converted to warrants to purchase common stock at a on a 1-for-0.0275 basis.

The warrants were valued using the Option Pricing Method and were estimated using the following assumptions:

	Nine Months Ended September 30,	
	2018	2017
Average expected life	3.1-8.8 years	2.5 years
Expected volatility	62.42%-71.21%	64.00%
Risk-free interest rate	2.88%-3.40%	1.55%
Expected dividend	–	–

Common Stock

Holders of common stock are entitled to one vote per share on all matters to be voted upon by the stockholders of the Company.

As of September 30, 2018, the Company had reserved common stock, on an if-converted basis, for issuance as follows:

Redeemable convertible preferred stock	16,028,462
Common stock options issued and outstanding	3,383,756
Remaining shares reserved for issuance under 2018 Equity Incentive Plan	2,577,223
Warrants to purchase redeemable convertible preferred stock	117,400
Warrants to purchase common stock	942
Total	22,107,783

9. Employee Stock Purchase Plan and Stock-Based Compensation

2018 Employee Stock Purchase Plan

In September 2018, the Company adopted the 2018 Employee Stock Purchase Plan ("ESPP"), which became effective on September 26, 2018, the day that the Form S-1 related to the IPO was declared effective, in order to enable eligible employees to purchase shares of the Company's common stock. The Company initially reserved 230,000 shares of common stock for sale under the ESPP. The aggregate number of shares reserved for sale under the ESPP will increase automatically on January 1st of each of the first ten calendar years after the effective date by the number of shares equal to the lesser of 1% of the total outstanding shares of the Company's common stock as of the immediately preceding December 31 (rounded to the nearest whole share) or a number of shares as may be determined by the Company's board of directors. The aggregate number of shares issued over the term of the Company's ESPP, subject to stock-splits, recapitalizations or similar events, may not exceed 2,300,000 shares of the Company's common stock.

2004 Equity Incentive Plan and 2018 Equity Incentive Plan

In September 2018, the Company adopted the 2018 Equity Incentive Plan ("2018 Plan"), which became effective on September 25, 2018. As a result, the Company will not grant any additional awards under the 2004 Equity Incentive Plan ("2004 Plan"). The terms of the 2004 Plan and applicable award agreements will continue to govern any outstanding awards thereunder. In addition to the shares of common stock reserved for future issuance under the 2004 Plan that were added to the 2018 Plan upon its effective date, the Company has initially reserved 2,300,000 shares of common stock for issuance under the 2018 Plan. In addition, the number of shares of common stock reserved for issuance under the 2018 Plan will automatically increase on the first day of January for a period of up to ten years, commencing on January 1, 2019, in an amount equal to 5% of the total number of shares of the Company's capital stock outstanding on the last day of the preceding year, or a lesser number of shares determined by the Company's board of directors.

The following table summarizes option activity under the Company's 2004 Plan and 2018 Plan:

	Shares Available for Grant	Outstanding Options	Weighted-Average Exercise Price	Weighted-Average Remaining Contract Term (Years)	Aggregate Intrinsic Value
Balances at December 31, 2017	91,149	835,320	$ 10.31	6.84	$ 3,813
Increase in authorized shares	5,053,013				
Granted	(2,570,848)	2,570,848	$ 13.15		
Exercised		(19,691)	$ 6.67		
Canceled	3,721	(3,721)	$ 13.58		
Balances at September 30, 2018	2,577,035	3,382,756		8.43	$ 8,434
Exercisable at September 30, 2018		650,197		5.80	$ 3,486
Vested and expected to vest at September 30, 2018		3,172,528		8.39	$ 8,073

The aggregate intrinsic value was calculated as the difference between the exercise prices of the underlying stock option awards and the estimated fair value of the Company's common stock on the date of exercise. For the three months and nine months ended September 30, 2018, the aggregate intrinsic value of stock options exercised was $18,275 and $153,414, respectively, determined at the date of the option exercise. For the three months and nine months ended September 30, 2017, the aggregate intrinsic value of stock options exercised was $8,431 and $51,107, respectively, determined at the date of the option exercise.

Employee Stock Options Valuation

For determining stock-based compensation expense, the fair-value-based measurement of each employee stock option was estimated as of the date of grant using the Black-Scholes option-pricing model with assumptions as follows:

	Nine Months Ended September 30,	
	2018	2017
Expected term (in years)	1.75-6.08	5.52-6.08
Expected volatility	48.86%-56.75%	56.52%-58.55%
Risk-free interest rate	2.72%-2.97%	1.89%-2.10%
Expected dividend	–	–

Using the Black-Scholes option-valuation model, the weighted-average estimated grant-date fair value of employee stock options granted during the three months and nine months ended September 30, 2018, was $8.93 and $8.93 per share, respectively, and during the three months and nine months ended September 30, 2017, was $7.20 and $7.14 per share, respectively. The total fair value of options vested during the three and nine months ended September 30, 2018 was $0.3 million and $0.7 million, respectively, and for the three and nine months ended September 30, 2017 was $0.6 million and $1.4 million, respectively.

Non-Employee Stock-Based Compensation Expense

The Company remeasures the estimated fair value of the unvested portion of the award each period, until the award is fully vested. The Company believes that the fair value of the stock options is more reliably measurable than the fair value of services received. The fair value of options granted to non-employees was estimated using the Black-Scholes method. The stock-based compensation expense related to non-employees for the three and nine months ended September 30, 2018 was $1,019 and $20,795, respectively, and for the three and nine months ended September 30, 2017 was $19,055 and $58,212, respectively.

Stock-Based Compensation Expense

Total stock-based compensation expense recognized was as follows:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2018	2017	2018	2017
Research and development	$ 65	$ 19	$ 160	$ 91
General and administrative	256	574	642	1,035
Total	$ 321	$ 593	$ 802	$ 1,126

As of September 30, 2018, there was approximately $22.2 million of total unrecognized compensation cost related to the unvested stock options granted under the Company's Plans. The remaining unrecognized compensation cost is expected to be recognized over a weighted-average period of 3.6 years.

Early Exercise of Options

Certain stock options granted under the Company's stock option Plan provide option holders the right to elect to exercise unvested options in exchange for restricted common stock. A summary of the restricted stock shares issued under the Company's Plan is as follows:

	Shares
Balance as of December 31, 2017	2,374
Vested	(2,374)
Balance as of September 30, 2018	–

The shares were subject to repurchase by the Company at the original exercise price in the event the optionee's employment was terminated either voluntarily or involuntarily. The repurchase right to these shares generally lapsed 25% after one year, and the remainder lapsed ratably over three years thereafter. The Company treated cash received from the exercise of unvested options as a refundable deposit, shown as a liability in its balance sheets. As of September 30, 2018 and December 31, 2017, the Company included cash received for the early exercise of options of approximately zero and $14,000, respectively, which is included in other noncurrent liabilities. Amounts are transferred from liabilities into common stock and additional paid-in-capital as the shares vest.

2017 Call Option Plan

In February 2017, the Company adopted a 2017 Call Option Plan to grant selected employees, officers, directors and consultants (collectively, the "Participants") options to purchase shares of the common stock of SutroVax, an unconsolidated investee of the Company (see Note 7). The Company has reserved 450,000 shares of SutroVax common stock as of September 30, 2018 for issuance under the program. The call options vest 25% on each of January 1, 2017, 2018, 2019, and 2020, and expire one year from the vesting date.

Using the Black-Scholes option-valuation model, the call options are measured at fair value on grant date and at each reporting period prior to their vesting, with cost recognized over the requisite service period as compensation cost. Any changes in the fair value subsequent to the vesting date are recognized in other income (expense), net in the statement of operations. Call options covering 420,000 shares have been granted with an exercise price of $0.76 per share, with 105,000 shares vested and zero exercised during the nine months period ended September 30, 2018 and 105,000 shares vested and exercised during the year ended December 31, 2017. Call options covering 315,000 shares were outstanding and 210,000 shares were unvested as of September 30, 2018.

The amounts recognized as compensation expense related to the 2017 Call Option Plan were $19,000 and $50,000 for the three and nine months ended September 30, 2018, respectively, and $15,000 and $65,000 for the three and nine months ended September 30, 2017, respectively.

The amounts recognized as other income (expense) related to the 2017 Call Option Plan were $6,000 and $10,000 for the three and nine months ended September 30, 2018, respectively, and $6,000 and ($10,000) for the three and nine months ended September 30, 2017, respectively.

10. Net Loss Per Share

The following table sets forth the computation of the Company's basic and diluted net loss per share.

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2018	2017	2018	2017
Numerator:				
Net loss, basic and diluted	$ (10,237)	$ (1,418)	$ (33,824)	$ (4,344)
Net loss	$ (10,237)	$ (1,418)	$ (33,824)	$ (4,344)
Denominator:				
Shares issued in computing net loss per share, basic and diluted	481,613	451,550	476,023	444,594
Net loss per share, basic and diluted	$ (21.26)	$ (3.14)	$ (71.06)	$ (9.77)

The following common stock equivalents were excluded from the computation of diluted net loss per share for the periods ended September 30, 2018 and 2017, because including them would have been antidilutive:

	As of September 30,	
	2018	2017
Redeemable convertible preferred stock	16,028,462	5,063,404
Options to purchase common stock	3,383,756	840,160
Warrants to purchase redeemable convertible preferred stock	117,400	93,527
Warrants to purchase common stock	942	1,099
Early exercised shares of common stock	–	5,914
Total	19,530,560	6,004,104

Shares of common stock subject to repurchase are excluded from the computation of weighted-average shares as the continued vesting of such shares is contingent upon the holders' continued service to the Company. For the computation of net loss per share for the nine months ended September 30, 2018 and 2017, zero and 5,914 shares subject to repurchase, respectively, were excluded from the computation of net loss per share.

11. Subsequent Events

Initial Public Offering

On September 26, 2018, the Company's registration statement on Form S-1 (File Nos. 333-227103 and 333-227548) relating to its IPO of its common stock was declared effective by the SEC and the shares of its common stock began trading on the Nasdaq Global Market on September 27, 2018. The public offering price of the shares sold in the IPO was $15.00 per share. The IPO closed on October 1, 2018, pursuant to which the Company sold 5,667,000 shares of common stock, for gross proceeds of approximately $85.0 million. The Company received net proceeds from the IPO of approximately $74.4 million, after underwriting discounts, commissions and estimated offering expenses. In addition to the shares of common stock sold in the IPO, the Company concurrently sold in a private placement to Merck, 666,666 shares of common stock at the IPO offering price of $15.00 per share, for proceeds of approximately $10.0 million.

- Immediately prior to the completion of the IPO on October 1, 2018, all outstanding shares of redeemable convertible preferred stock were converted into 16,028,462 shares of common stock. Subsequent to the closing of the IPO, there were no shares of redeemable convertible preferred stock outstanding. The condensed financial statements as of September 30, 2018, including share and per share amounts, do not give effect to the IPO, or the conversion of the redeemable convertible preferred stock, as the IPO and such conversions were completed subsequent to September 30, 2018; and
- Upon completion of the IPO, all outstanding warrants to purchase 2,370,799 shares of redeemable convertible preferred stock automatically converted into warrants to purchase 71,812 shares of common stock.

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

You should read the following discussion of our financial condition and results of operations in conjunction with our condensed financial statements and the related notes and other financial information included elsewhere in this Quarterly Report on Form 10-Q and our final prospectus filed with the Securities and Exchange Commission pursuant to Rule 424(b)(4) under the Securities Act of 1933, as amended, dated September 26, 2018 (the "Prospectus"). In addition to historical financial information, this discussion contains forward-looking statements based upon current expectations that involve risks and uncertainties, such as statements of our plans, objectives, expectations, intentions and belief. Our actual results could differ materially from those anticipated in these forward-looking statements as a result of various factors, including those set forth in the section titled "Risk Factors" under Part II, Item 1A below. These forward-looking statements may include, but are not limited to, statements regarding our future results of operations and financial position, business strategy, market size, potential growth opportunities, clinical development activities, efficacy and safety profile of our product candidates, our ability to maintain and recognize the benefits of certain designations received by product candidates, the timing and results of pre-clinical studies and clinical trials, and the receipt and timing of potential regulatory designations, approvals and commercialization of product candidates. The words "believe," "may," "will," "potentially," "estimate," "continue," "anticipate," "predict," "target," "intend," "could," "would," "should," "project," "plan," "expect," and similar expressions that convey uncertainty of future events or outcomes are intended to identify forward-looking statements, although not all forward-looking statements contain these identifying words.

These statements are based upon information available to us as of the date of this Quarterly Report on Form 10-Q, and while we believe such information forms a reasonable basis for such statements, such information may be limited or incomplete, and our statements should not be read to indicate that we have conducted an exhaustive inquiry into, or review of, all potentially available relevant information. These statements are inherently uncertain and investors are cautioned not to unduly rely upon these statements.

Overview

We are a clinical stage drug discovery, development and manufacturing company focused on leveraging our proprietary integrated cell-free protein synthesis and site-specific conjugation platform, XpressCF+™, to create a broad variety of optimally designed, next-generation protein therapeutics for cancer and autoimmune disorders. We aim to design therapeutics using the most potent modalities, including cytokine-based immuno-oncology therapeutics, antibody-drug conjugates, or ADCs, and bispecific antibodies that are directed primarily against clinically validated targets where the current standard of care is suboptimal. Our platform allows us to accelerate the discovery and development of molecules by enabling the rapid and systematic evaluation of protein structure-activity relationships to create optimized homogeneous product candidates. Our mission is to transform the lives of patients by using our XpressCF+™ Platform to create medicines with improved therapeutic profiles for areas of unmet need.

Once identified, production of protein drug candidates can be rapidly and predictably scaled in our current Good Manufacturing Practices compliant manufacturing facility. We have the ability to manufacture our cell-free extract that supports our production of proteins on a large scale using a semi-continuous fermentation process. Our two most advanced product candidates are wholly owned: STRO-001, an ADC directed against CD74, for patients with multiple myeloma and non-Hodgkin lymphoma; and STRO-002, an ADC directed against folate receptor-alpha, or FolRα, for patients with ovarian and endometrial cancers. We have also entered into multi-target, product-focused collaborations with leaders in the field of oncology, including a cytokine derivatives collaboration with Merck Sharp & Dohme Corp., a subsidiary of Merck & Co., Inc., Kenilworth, NJ, USA, or Merck, a B cell maturation antigen, or BCMA, and an immuno-oncology directed alliance with Celgene Corporation, or Celgene, and an oncology-focused collaboration with Merck KGaA, Darmstadt, Germany (operating in the United States and Canada under the name "EMD Serono").

Since the commencement of our operations, we have devoted substantially all of our resources to performing research and development and manufacturing activities in support of our own product development efforts and those of our collaborators, raising capital to support and expand such activities and providing general and administrative support for these operations. We have funded our operations to date primarily from upfront, milestone and other payments under our collaboration agreements with Merck, Celgene and EMD Serono, the issuance and sale of redeemable convertible preferred stock and debt proceeds.

On September 26, 2018, our registration statements on Form S-1 (File Nos. 333-227103 and 333-227548) relating to our initial public offering, or IPO, were declared effective by the Securities Exchange Commission, or SEC, and shares of our common stock began trading on the Nasdaq Global Market on September 27, 2018. Upon the closing of the IPO on October 1, 2018, we issued and sold an aggregate of 5,667,000 shares of common stock at a price of $15.00 per share for gross proceeds of approximately $85.0 million. We received net proceeds from the IPO of approximately $74.4 million, after underwriting discounts, commissions and estimated offering expenses. In addition to the shares of common stock sold in the IPO, we concurrently sold in a private placement to Merck, 666,666 shares of common stock at the IPO offering price of $15.00 per share, for proceeds of approximately $10.0 million.

We have not generated any revenue from commercial product sales and have no products for commercial sale. Our net loss was $10.2 million and $1.4 million for the three months ended September 30, 2018 and 2017, respectively, and $33.8 million and $4.3 million for the nine months ended September 30, 2018 and 2017, respectively. Although we had net income for the year ended December 31, 2016 of $1.7 million, we cannot assure you that we will ever be profitable again or that we will generate positive cash flow from operating activities. As of September 30, 2018, we had an accumulated deficit of $148.8 million. We do not expect to generate any revenue from commercial product sales unless and until we successfully complete development and obtain regulatory approval for one or more of our product candidates, which we expect will take a number of years. If we obtain regulatory approval for any of our product candidates, we expect to incur significant commercialization expenses related to product sales, marketing, manufacturing and distribution. We expect our operating expenses to significantly increase as we continue to develop, and seek regulatory approvals for, our product candidates, engage in other research and development activities, expand our pipeline of product candidates, continue to develop our manufacturing facility and capabilities, maintain and expand our intellectual property portfolio, seek regulatory and marketing approval for any product candidates that we may develop, acquire or in-license other assets or technologies, ultimately establish a sales, marketing and distribution infrastructure to commercialize any products for which we may obtain marketing approval and operate as a public company. Our net losses may fluctuate significantly from quarter-to-quarter and year-to-year, depending on the timing of our clinical trials, our expenditures on other research and development activities and the timing of achievement and receipt of upfront, milestones and other collaboration agreement payments.

Recent Developments

STRO-001 receives Orphan Drug Designation

We announced in October 2018 that the U.S. Food and Drug Administration (FDA) granted orphan drug designation for STRO-001, for the treatment of multiple myeloma. The FDA's Orphan Drug Designation Program provides orphan status to drugs and biologics which are defined as those intended for the safe and effective treatment, diagnosis or prevention of rare diseases/disorders that affect fewer than 200,000 people in the U.S., or that affect more than 200,000 persons but are not expected to recover the costs of developing and marketing a treatment drug.

Financial Operations Overview

Total Revenue

We have no products approved for commercial sale and have not generated any revenue from commercial product sales. Our total revenue to date has been generated principally from our collaboration and license agreements with Celgene, Merck and EMD Serono, and to a lesser extent, from manufacturing, supply and services and products we provide to Celgene and SutroVax, Inc., or SutroVax.

Collaboration Revenue

Collaboration revenue consists of revenue received from upfront, milestone and contingent payments received from our collaborators. We recognize revenue from nonrefundable upfront license payments over the term of our estimated period of performance under the agreements. In addition to receiving upfront payments, we may also be entitled to milestone and other contingent payments upon achieving predefined objectives. Revenue from milestones, if they are nonrefundable and deemed substantive, are recognized upon successful accomplishment of the performance obligations. To the extent that non-substantive milestones are achieved, and we have remaining performance obligations, such payments are deferred and recognized as revenue over the estimated remaining period of performance.

We expect that any collaboration revenue we generate principally from our current collaboration and license agreements with Celgene, Merck and EMD Serono, and from any future collaboration partners, will fluctuate in the future as a result of the timing and amount of upfront, milestones and other collaboration agreement payments. We began recognizing revenue under the 2018 Merck Agreement in the third quarter of 2018.

Other Revenue – Related Parties

Other revenue – related parties consists of revenue received from development, manufacturing and supply chain management services, including clinical product supply, that we provide to Celgene and from extracts and custom reagents that we provide to SutroVax. We recognize revenue when the services or products are provided. We expect other revenue – related parties will fluctuate from period to period as a result of the timing of ordering and providing such services and products.

Operating Expenses

Research and Development

Research and development expenses represent costs incurred in performing research, development and manufacturing activities in support of our own product development efforts and those of our collaborators, and include salaries, employee benefits, stock-based compensation, laboratory supplies, outsourced research and development expenses, professional services and allocated facilities-related costs. We expense both internal and external research and development costs as they are incurred. Non-refundable advance payments for services that will be used or rendered for future research and development activities are recorded as prepaid expenses and recognized as expenses as the related services are performed.

We expect our research and development expenses to increase substantially in absolute dollars in the future as we advance our product candidates into and through preclinical studies and clinical trials, pursue regulatory approval of our product candidates, expand our pipeline of product candidates and continue to develop our manufacturing facility and capabilities. The process of conducting the necessary preclinical and clinical research to obtain regulatory approval is costly and time consuming. The actual probability of success for our product candidates may be affected by a variety of factors including: the safety and efficacy of our product candidates, early clinical data, investment in our clinical programs, the ability of collaborators to successfully develop our licensed product candidates, competition, manufacturing capability and commercial viability. We may never succeed in achieving regulatory approval for any of our product candidates. As a result of the uncertainties discussed above, we are unable to determine the duration and completion costs of our research and development projects or when and to what extent we will generate revenue from the commercialization and sale of our product candidates.

The following table summarizes our research and development expenses incurred during the periods indicated. The internal costs include personnel, facility costs and research and scientific related activities associated with our pipeline. The external program costs reflect external costs attributable to our clinical development candidates and preclinical candidates selected for further development. Such expenses include third-party costs for preclinical and clinical studies and research services, and other consulting costs.

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2018	2017	2018	2017
Internal costs:				
Research and drug discovery	$ 3,708	$ 3,798	$ 11,328	$ 11,546
Process and product development	1,947	2,083	6,132	6,279
Manufacturing	4,001	4,846	12,267	12,881
Clinical development	398	245	997	572
Total internal costs	10,054	10,972	30,724	31,278
External Program Costs:				
Research and drug discovery	252	392	767	890
Toxicology and translational science	708	680	1,830	3,379
Process and product development	121	22	361	66
Manufacturing	718	1,396	3,664	3,471
Clinical development	789	207	2,129	415
Total external program costs	2,588	2,697	8,751	8,221
Total research and development expenses	$ 12,642	$ 13,669	$ 39,475	$ 39,499

General and Administrative

Our general and administrative expenses consist primarily of personnel costs, expenses for outside professional services, including legal, human resource, audit, accounting and tax services and allocated facilities-related costs. Personnel costs include salaries, employee benefits and stock-based compensation. We expect to incur additional expenses operating as a public company, including expenses related to compliance with the rules and regulations of the Securities and Exchange Commission, or SEC, and listing standards applicable to companies listed on a national securities exchange, additional insurance expenses, investor relations activities and other administrative and professional services. We also expect to increase the size of our administrative function to support the anticipated growth of our business.

Interest Income

Interest income consists primarily of interest received on our invested funds.

Interest Expense

Interest expense includes interest incurred on our debt and amortization of debt issuance costs.

Other Income (Expense), Net

Other income (expense), net primarily includes gains and losses from the remeasurement of our liabilities related to our redeemable convertible preferred stock warrants. We will continue to adjust the liability for changes in estimated fair value until the earlier of the exercise of the warrants, expiration of the warrants, or conversion of the redeemable convertible preferred stock warrants upon the completion of a liquidation event, including the completion of an initial public offering, into common stock warrants. With the completion of our IPO on October 1, 2018, the redeemable convertible preferred stock warrant liability will be reclassified to additional paid-in-capital and we will no longer record any related periodic fair value adjustments.

Comparison of the Three Months Ended September 30, 2018 and 2017

	Three Months Ended September 30,			
	2018	2017	Change	Change (%)
	(dollars in thousands)			
Revenue:				
Collaboration revenue	$ 6,924	$ 17,499	$ (10,575)	(60)%
Other revenue—related parties	912	–	912	*
Total revenue	7,836	17,499	(9,663)	(55)%
Operating expenses:				
Research and development	12,642	13,669	(1,027)	(8)%
General administrative	5,351	4,895	456	9%
Total operating expenses	17,993	18,564	(571)	(3)%
Loss from operations	(10,157)	(1,065)	(9,092)	*
Interest income	403	62	341	*
Interest expense	(415)	(235)	(180)	77%
Other income (expense), net	(68)	(180)	112	(62)%
Net loss	$ (10,237)	$ (1,418)	$ (8,819)	*

* Percentage not meaningful

Revenue

We have recognized revenue as follows during the periods indicated:

	Three Months Ended September 30,			
	2018	2017	Change	Change (%)
	(in thousands)			
Collaboration revenue:				
Celgene Corporation ("Celgene")—related party:				
Amortization of up-front payments	$ 1,655	$ 2,642	$ (987)	(37)%
Research and development services	5	–	5	*
Milestones and contingent payments	–	13,112	(13,112)	(100)%
Total	1,660	15,754	(14,094)	(89)%
Merck Sharp & Dohme Corporation ("Merck")—related party:				
Amortization of up-front payments	2,818	–	2,818	*
Research and development services	696	–	696	*
Total	3,514	-	3,514	*
Merck KGaA, Darmstadt, Germany (operating in the United States and Canada under the name "EMD Serono"):				
Amortization of up-front payments	1,038	1,030	8	1%
Research and development services	712	715	(3)	(0)%
Total	1,750	1,745	5	0%
Total collaboration revenue	$ 6,924	$ 17,499	$ (10,575)	(60)%
Other revenue—related parties:				
Celgene Corporation:				
Development and manufacturing services and clinical product supply	$ 330	$ –	$ 330	*
SutroVax:				
Supply and other	582	–	582	*
Total other revenue—related parties	$ 912	$ –	$ 912	*
Total revenue	$ 7,836	$ 17,499	$ (9,663)	(55)%

* Percentage not meaningful

Total revenue decreased by $9.7 million, or 55%, during the three months ended September 30, 2018 compared to the three months ended September 30, 2017, due to the decline in collaboration revenue of $10.6 million, offset partially by a $0.9 million increase in other revenue-related parties.

The decline in collaboration revenue was due primarily to a $10.0 million milestone earned in September 2017 from Celgene for certain manufacturing accomplishments with no similar payment earned in during the three months ended September 30, 2018, a $3.1 million decrease in other contingent payments, and a decrease of $1.0 million recognized from the up-front nonrefundable payment of $83.1 million received in 2014 under the 2014 Celgene Agreement, as the remaining deferred revenue balance, as of the effective date of the 2017 Celgene Agreement, along with the payments under the 2017 Celgene Agreement, which are recognized ratably starting in August 2017 and ending in September 2020. The decline was partially offset by a $3.5 million increase in collaboration revenue recognized from the up-front nonrefundable payment of $60.0 million received in 2018 under the 2018 Merck Agreement being recognized as revenue ratably starting in July 2018 and ending in July 2022 and research and development services provided to Merck.

Other revenue recognized from development and clinical manufacturing services and supplies provided to Celgene increased by $0.3 million, and for supplies and other revenue related to SutroVax increased by $0.6 million.

Research and Development Expense

Research and development expense decreased by $1.0 million, or 8%, during the three months ended September 30, 2018 compared to the three months ended September 30, 2017, due to lower spending on manufacturing materials.

General and Administrative Expense

General and administrative expense increased by $0.5 million, or 9%, during the three months ended September 30, 2018 compared to the three months ended September 30, 2017. The increase was due primarily to increased spending of $0.2 million for legal and consulting services and a $0.1 million increase in headcount-related expenses.

Interest Income

Interest income increased by $0.3 million during the three months ended September 30, 2018 compared to the three months ended September 30, 2017, due primarily to a higher cash balance resulting from the proceeds from the July 2018 closing of the Series E financing and the up-front payment of $60.0 million received under the 2018 Merck Agreement.

Interest Expense

Interest expense increased by $0.2 million during the three months ended September 30, 2018 compared to the three months ended September 30, 2017, due to interest incurred under a loan and security agreement that we entered into with Oxford and SVB, in August 2017.

Other Income (Expense), Net

Other income (expense), net changed by $0.1 million during the three months ended September 30, 2018 compared to the three months ended September 30, 2017. The change was primarily due to the change in the estimated fair value of our redeemable convertible preferred stock warrants during the three months ended September 30, 2018.

Comparison of the Nine Months Ended September 30, 2018 and 2017

	Nine Months Ended September 30,			
	2018	2017	Change	Change (%)
	(dollars in thousands)			
Revenue:				
Collaboration revenue	$ 13,955	$ 47,701	$ (33,746)	(71)%
Other revenue—related parties	5,378	–	5,378	*
Total revenue	19,333	47,701	(28,368)	(59)%
Operating expenses:				
Research and development	39,475	39,499	(24)	0%
General administrative	13,806	12,306	1,500	12%
Total operating expenses	53,281	51,805	1,476	3%
Loss from operations	(33,948)	(4,104)	(29,844)	*
Interest income	483	192	291	*
Interest expense	(1,199)	(235)	(964)	*
Other income (expense), net	840	(197)	1,037	*
Net loss	$ (33,824)	$ (4,344)	$ (29,480)	*

* Percentage not meaningful

Collaboration Revenue

We have recognized revenue from our collaboration agreements as follows during the periods indicated:

	Nine Months Ended September 30,			
	2018	2017	Change	Change (%)
	(in thousands)			
Collaboration revenue:				
Celgene Corporation ("Celgene")—related party:				
Amortization of up-front payments	$ 4,912	$ 16,355	$ (11,443)	(70)%
Research and development services	103	–	103	*
Milestones and contingent payments	0	25,937	(25,937)	(100)%
Total	5,015	42,292	(37,277)	(88)%
Merck Sharp & Dohme Corporation ("Merck")—related party:				
Amortization of up-front payments	2,818	–	2,818	*
Research and development services	696	–	696	*
Total	3,514	–	3,514	*
Merck KGaA, Darmstadt, Germany (operating in the United States and Canada under the name "EMD Serono"):				
Amortization of up-front payments	3,104	3,090	14	0%
Research and development services	2,322	2,319	3	0%
Total	5,426	5,409	17	0
Total collaboration revenue	$ 13,955	$ 47,701	$ (33,746)	(71)%
Other revenue—related parties:				
Celgene Corporation:				
Development and manufacturing services and clinical product supply	$ 3,894	$ –	$ 3,894	*
SutroVax:				
Supply and other	1,484	–	1,484	*
Total other revenue—related parties	$ 5,378	$ –	$ 5,378	*
Total revenue	$ 19,333	$ 47,701	$ (28,368)	(59)%

* Percentage not meaningful

Total revenue decreased by $28.4 million, or 59%, during the nine months ended September 30, 2018 compared to the nine months ended September 30, 2017, due to the decline in collaboration revenue of $33.7 million, offset partially by a $5.4 million increase in other revenue--related parties.

The decline in collaboration revenue was due primarily to a $10.0 million milestone earned in September 2017 from Celgene for certain manufacturing accomplishments with no similar payment earned in during the nine months ended September 30, 2018, a $15.9 million decrease in other contingent payments, and a decrease of $11.3 million recognized from the up-front nonrefundable payment of $83.1 million received in 2014 under the 2014 Celgene Agreement, as the remaining deferred revenue balance, as of the effective date of the 2017 Celgene Agreement, along with the payments under the 2017 Celgene Agreement, which are recognized ratably starting in August 2017 and ending in September 2020. The decline was partially offset by a $3.5 million increase in collaboration revenue from the up-front nonrefundable payment of $60.0 million received in 2018 under the 2018 Merck Agreement being recognized as revenue ratably starting in July 2018 and ending in July 2022 and research and development services provided to Merck.

Other revenue recognized from development and clinical manufacturing services and supplies provided to Celgene increased by $3.9 million, and supplies and other revenue provided to SutroVax increased by $1.5 million.

Research and Development Expense

Research and development expense remained flat during the nine months ended September 30, 2018 compared to the nine months ended September 30, 2017, due principally from a decrease of $2.3 million in research, manufacturing costs and toxicology studies due to timing, which was offset by a $2.2 million increase in clinical development costs due to our advancing clinical trials.

General and Administrative Expense

General and administrative expense increased by $1.5 million, or 12%, during the nine months ended September 30, 2018 compared to the nine months ended September 30, 2017. The increase was due to an increase of $0.5 million in headcount-related expenses, an increase of $0.4 million in legal, audit and consulting fees, and an increase of $0.5 million from the inclusion of personnel-related costs previously in research and development expense effective in January 2018.

Interest Income

Interest income increased by $0.3 million during the nine months ended September 30, 2018 compared to the nine months ended September 30, 2017, due primarily to a higher cash balance resulting from the gross proceeds from the $85.4 million Series E financing and the up-front payment of $60.0 million received under the 2018 Merck Agreement.

Interest Expense

Interest expense increased by $1.0 million during the nine months ended September 30, 2018 compared to the nine months ended September 30, 2017, due to interest incurred under a loan and security agreement that we entered into with Oxford and SVB, in August 2017.

Other Income (Expense), Net

Other income (expense), net changed by $1.0 million during the nine months ended September 30, 2018 compared to the nine months ended September 30, 2017. The change was primarily due to the change in the estimated fair value of our redeemable convertible preferred stock warrants during the nine months ended September 30, 2018.

Liquidity and Capital Resources

Sources of Liquidity

To date, we have incurred net losses, except for 2016, and negative cash flows from operations. Prior to our IPO, our operations have been financed primarily by payments received from our collaborators, net proceeds from the sale and issuance of our preferred stock, and debt proceeds. As of September 30, 2018, we had $123.0 million in cash, cash equivalents and marketable securities, and outstanding debt of $14.7 million, which is net of $0.3 million unamortized debt discount, and an accumulated deficit of $148.8 million. In connection with our IPO, we issued and sold an aggregate of 5,667,000 shares of common stock at a price of $15.00 per share. We received proceeds of $74.4 million, after underwriting discounts and commissions and estimated offering costs. In addition to the shares of common stock sold in the IPO, we sold in a private placement to Merck 666,666 shares of common stock at the IPO offering price of $15.00 per share, for proceeds of approximately $10.0 million.

Funding Requirements

Based upon our current operating plan, we believe that with our existing capital resources will enable us to fund our operating expenses and capital expenditure requirements through at least the next twelve months since the date of the filing. We have based this estimate on assumptions that may prove to be wrong, and we could utilize our available capital resources sooner than we currently expect. We will continue to require additional financing to advance our current product candidates through clinical development, to develop, acquire or in-license other potential product candidates and to fund operations for the foreseeable future. We will continue to seek funds through equity or debt financings, collaborative or other arrangements with corporate sources, or through other sources of financing. Adequate additional funding may not be available to us on acceptable terms, or at all. Any failure to raise capital as and when needed could have a negative impact on our financial condition and on our ability to pursue our business plans and strategies.

We will require additional financing to fund working capital and pay our obligations. We may seek to raise any necessary additional capital through a combination of public or private equity offerings, debt financings, collaborations, strategic alliances, licensing arrangements and other marketing and distribution arrangements. There can be no assurance that we will be successful in acquiring additional funding at levels sufficient to fund our operations or on terms favorable to us. If we are unable to obtain adequate financing when needed, we may have to delay, reduce the scope of or suspend one or more of our pre-clinical and clinical studies, research and development programs or commercialization efforts. Because of the numerous risks and uncertainties associated with the development and commercialization of our product candidates and the extent to which we may enter into additional collaborations with third parties to participate in their development and commercialization, we are unable to estimate the amounts of increased capital outlays and operating expenditures associated with our current and anticipated clinical studies.

If we need to raise additional capital to fund our operations, funding may not be available to us on acceptable terms, or at all. If we are unable to obtain adequate financing when needed, we may have to delay, reduce the scope of or suspend one or more of our clinical trials, research and development programs or commercialization efforts. We may seek to raise any necessary additional capital through a combination of public or private equity offerings, debt financings and collaborations or licensing arrangements.

To the extent we raise additional capital through additional collaborations, strategic alliances or licensing arrangements with third parties, we may have to relinquish valuable rights to our product candidates, future revenue streams, research programs or product candidates or to grant licenses on terms that may not be favorable to us. If we do raise additional capital through public or private equity or convertible debt offerings, the ownership interest of our existing stockholders will be diluted, and the terms of these securities may include liquidation or other preferences that adversely affect our stockholders' rights. If we raise additional capital through debt financing, we may be subject to covenants limiting or restricting our ability to take specific actions, such as incurring additional debt, making capital expenditures or declaring dividends. If we are unable to raise capital, we will need to delay, reduce or terminate planned activities to reduce costs. Doing so will likely harm our ability to execute our business plans.

Cash Flows

The following table summarizes our cash flows during the periods indicated:

	Nine Months Ended September 30,	
	2018	**2017**
	(in thousands)	
Cash provided by (used in) operating activities	$ 18,618	$ (32,234)
Cash provided by (used in) investing activities	(82,215)	30,972
Cash provided by financing activities	82,930	14,816
Increase in cash and cash equivalents	$ 19,333	$ 13,554

Cash Flows from Operating Activities

Cash provided by operating activities for the nine months ended September 30, 2018 was $18.6 million. Our net loss of $33.8 million was decreased by non-cash charges of $3.4 million for depreciation and amortization and $0.8 million for stock-based compensation, which were offset partially by the gain of $0.8 million for the change in fair value of our redeemable convertible preferred stock warrant liability. Cash provided in operating activities reflected a net increase in operating assets and liabilities of $48.9 million, primarily due to an increase in our deferred revenue balance of $60.0 million from the upfront payment related to the 2018 Merck Agreement, net of $10.8 million recognized in revenue pertaining to payments received from our collaborators Celgene and EMD Serono during prior periods, an increase in $1.1 million in other liabilities, primarily due to payments received from LLS, and an increase of $0.4 million in accrued bonus compensation due to increased headcount. This was offset partially by an increase in accounts receivable of $0.8 million due to higher research and development services revenues from our collaborators, an increase in $0.9 million in prepaid expenses and other current assets due to payments made to contract research organizations related to STRO-001, and a $0.1 million decrease in accounts payable due to the timing of payments.

Cash used in operating activities for the nine months ended September 30, 2017 was $32.2 million. Our net loss of $4.3 million was decreased by non-cash charges of $3.8 million for depreciation and amortization, $1.1 million for stock-based compensation, $0.2 million for the change in fair value of our redeemable convertible preferred stock warrant liability and $0.1 million for the amortization of premium on marketable securities. Cash used in operating activities reflected a net decrease in operating assets and liabilities of $33.3 million, primarily due to a decrease in our deferred revenue balance of $22.9 million from the recognition of revenue pertaining to payments received from our collaborators Celgene and EMD Serono during prior periods, an increase in accounts receivables of $10.3 million due primarily to milestone revenue from our collaborator Celgene, and an increase in $0.3 million in prepaid expenses and other current assets due to timing of payments and a decrease of $0.2 million in accrued bonus compensation. This was offset partially by an increase of $0.2 million in accounts payable and a $0.1 million increase in other liabilities.

Cash Flows from Investing Activities

Cash used in investing activities of $82.2 million for the nine months ended September 30, 2018 was related to purchases of marketable securities of $81.5 million and purchases of property and equipment of $0.8 million, principally for laboratory and manufacturing equipment.

Cash provided by investing activities of $31.0 million for the nine months ended September 30, 2017 was related to proceeds from maturities of marketable securities of $32.7 million and sales of marketable securities of $6.0 million, partially offset by purchases of marketable securities of $5.0 million and purchases of property and equipment of $2.7 million, principally for laboratory and manufacturing equipment and leasehold improvements.

Cash Flows from Financing Activities

Cash provided by financing activities of $82.9 million for the nine months ended September 30, 2018 was primarily related to the proceeds from our sale of Series E redeemable convertible preferred stock, net of issuance costs, of $84.7 million, proceeds of $0.4 million related to the exercise of stock options, partially offset by the payment of $2.4 million in financing costs related to the IPO.

Cash provided by financing activities of $14.8 million for the nine months ended September 30, 2017 was related primarily to the proceeds from our debt financing with Oxford and SVB, net of issuance costs.

Off-Balance Sheet Arrangements

We have not entered into any off-balance sheet arrangements, as defined under SEC rules. While we have an investment classified as variable interest entity, its purpose is not to provide off-balance sheet financing.

Critical Accounting Policies and Estimates

Our management's discussion and analysis of our financial condition and results of operations is based on our financial statements, which have been prepared in accordance with United States generally accepted accounting principles. The preparation of these financial statements requires us to make estimates and assumptions that affect the reported amounts of assets and liabilities and the disclosure of contingent assets and liabilities at the date of the financial statements, as well as the reported revenue generated and expenses incurred during the reporting periods. Our estimates are based on our historical experience and on various other factors that we believe are reasonable under the circumstances, the results of which form the basis for making judgments about the carrying value of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates under different assumptions or conditions.

We believe that the assumptions and estimates associated with revenue recognition, research and development expenditures, stock-based compensation and redeemable convertible preferred stock warrants have the most significant impact on our condensed financial statements. Therefore, we consider these to be our critical accounting policies and estimates.

There have been no significant changes in our critical accounting policies and estimates as compared to the critical accounting policies and estimates disclosed in the section titled "Management's Discussion and Analysis of Financial Condition and Operations" included in the Prospectus, except for the determination of the fair value of our common stock, which is used in estimating the fair value of stock-based awards at grant date. Prior to the IPO, our common stock was not publicly traded, therefore we estimated the fair value of our common stock as discussed in the Prospectus. Following our IPO, the closing sale price per share of our common stock as reported on the Nasdaq Global Market on the date of grant will be used to determine the exercise price per share of our share-based awards to purchase common stock.

JOBS Act Accounting Election

We are an “emerging growth company,” as defined in the Jumpstart Our Business Startups Act of 2012, or the JOBS Act. Under the JOBS Act, emerging growth companies can delay adopting new or revised accounting standards issued subsequent to the enactment of the JOBS Act until such time as those standards apply to private companies. We have elected to use this extended transition period for complying with new or revised accounting standards that have different effective dates for public and private companies until the earlier of the date we (i) are no longer an emerging growth company or (ii) affirmatively and irrevocably opt out of the extended transition period provided in the JOBS Act. As a result, our financial statements may not be comparable to companies that comply with new or revised accounting pronouncements as of public company effective dates.

We will remain an emerging growth company until the earliest of (1) the last day of our first fiscal year (a) following the fifth anniversary of the completion of the IPO, (b) in which we have total annual gross revenues of at least $1.07 billion, or (c) in which we are deemed to be a large accelerated filer, which means the market value of our common stock that is held by non-affiliates exceeds $700.0 million as of the prior June 30th and (2) the date on which we have issued more than $1.0 billion in non-convertible debt securities during the prior three-year period.

Recent Accounting Pronouncements

See Note 2 to our financial statements included elsewhere in this document for more information.

Item 3. Quantitative and Qualitative Disclosures About Market Risk.

We are exposed to market risks in the ordinary course of our business. These risks primarily include interest rate sensitivities. The primary objective of our investment activities is to preserve our capital to fund our operations. We also seek to maximize income from our investments without assuming significant risk. To achieve our objectives, we maintain a portfolio of cash equivalents and investments in a variety of securities of high credit quality.

We had cash, cash equivalents and marketable securities $123.0 million and $22.0 million as of September 30, 2018 and December 31, 2017, respectively, which consisted of money market funds, commercial paper, corporate debt securities, asset-based securities and U.S. government agency securities. Such interest earning instruments carry a degree of interest rate risk; however, historical fluctuations in interest income have not been significant.

We do not enter into investments for trading or speculative purposes and have not used any derivative financial instruments to manage our interest rate risk exposure. We have not been exposed nor do we anticipate being exposed to material risks due to changes in interest rates. A hypothetical 10% change in interest rates during any of the periods presented would not have had a material impact on our financial statements.

As of September 30, 2018 and December 31, 2017, we had $14.7 million and $14.6 million, respectively, in debt outstanding, net of debt discount. Our debt with Oxford and SVB bears interest at a floating rate that equals the greater of 7.39% or the sum of the 30-day U.S. Dollar LIBOR plus 6.40% and has a maturity date of August 1, 2021. Such interest-bearing debt carries a limited degree of interest rate risk. If overall interest rates had increased or decreased by 100 basis points during the periods presented our interest expense would not have been materially affected.

Item 4. Controls and Procedures.

Evaluation of Disclosure Controls and Procedures

Our management, with the participation of our chief executive officer and chief financial officer, evaluated the effectiveness of our disclosures controls and procedures, as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act, as of September 30, 2018. 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, 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 September 30, 2018, our chief executive officer and chief financial officer concluded that, as of such date, our disclosure controls and procedures were effective at a reasonable assurance level.

Changes in Internal Control over Financial Reporting

Management determined that, as of September 30, 2018, there were no changes in our internal control over financial reporting that occurred during the fiscal quarter then ended 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.

From time to time, we may be involved in legal proceedings arising in the ordinary course of our business. We are not presently a party to any legal proceedings that, in the opinion of management, would have a material adverse effect on our business. Regardless of outcome, litigation can have an adverse impact on us due to defense and settlement costs, diversion of management resources, negative publicity and reputational harm, and other factors.

Item 1A. Risk Factors.

RISK FACTORS

Investing in our common stock involves a high degree of risk. Before making your decision to invest in shares of our common stock, you should carefully consider the risks described below, together with the other information contained in this quarterly report, including our financial statements and the related notes and "Management's Discussion and Analysis of Financial Condition and Results of Operations". The risks and uncertainties described below are not the only ones we face. Additional risks and uncertainties that we are unaware of, or that we currently believe are not material, may also become important factors that affect us. We cannot assure you that any of the events discussed below will not occur. These events could have a material and adverse impact on our business, financial condition, results of operations and prospects. If that were to happen, the trading price of our common stock could decline, and you could lose all or part of your investment.

Risks Related to Our Business

We are a clinical stage biopharmaceutical company with a limited operating history and no products approved for commercial sale. We have a history of significant losses, expect to continue to incur significant losses for the foreseeable future and may never achieve or maintain profitability, which could result in a decline in the market value of our common stock.

We are a clinical stage biopharmaceutical company with a limited operating history on which to base your investment decision. Biotechnology product development is a highly speculative undertaking and involves a substantial degree of risk.

To date, we have enrolled the first several patients in our initial clinical trial, evaluating the safety of our first clinical stage product candidate, STRO-001, have no products approved for commercial sale, have not generated any revenue from commercial product sales and, as of September 30, 2018, had an accumulated deficit of $148.8 million. For the year ended December 31, 2017 and for the nine months ended September 30, 2018, our net loss was $19.7 million and $33.8 million, respectively. Substantially all of our losses have resulted from expenses incurred in connection with our research and development programs and from general and administrative costs associated with our operations. Our technologies and product candidates are in early stages of development, and we are subject to the risks of failure inherent in the development of product candidates based on novel technologies. In addition, we have limited experience as a clinical stage company and have not yet demonstrated an ability to successfully overcome many of the risks and uncertainties frequently encountered by companies in new and rapidly evolving fields, particularly in the biotechnology industry. Furthermore, we do not expect to generate any revenue from commercial product sales for the foreseeable future, and we expect to continue to incur significant operating losses for the foreseeable future due to the cost of research and development, preclinical studies and clinical trials and the regulatory approval process for our product candidates. We expect our net losses to increase substantially as we progress further into clinical development of our lead programs and create additional infrastructure to support operations as a public company. However, the amount of our future losses is uncertain. Our ability to achieve profitability, if ever, will depend on, among other things, our, or our existing or future collaborators', successful development of product candidates, evaluating the related commercial opportunities, obtaining regulatory approvals to market and commercialize product candidates, manufacturing any approved products on commercially reasonable terms, establishing a sales and marketing organization or suitable third-party alternatives for any approved product and raising sufficient funds to finance business activities. If we, or our existing or future collaborators, are unable to develop our technologies and commercialize one or more of our product candidates or if sales revenue from any product candidate that receives approval is insufficient, we will not achieve profitability, which could have a material and adverse effect on our business, financial condition, results of operations and prospects. Even if we achieve profitability in the future, we may not be able to sustain profitability in subsequent periods.

We will need substantial additional funds to advance development of our product candidates. This additional financing may not be available on acceptable terms, or at all. Failure to obtain this necessary capital when needed may force us to delay, limit or terminate our product development programs, commercialization efforts or other operations.

The development of biopharmaceutical product candidates is capital-intensive. If our product candidates enter and advance through preclinical studies and clinical trials, we will need substantial additional funds to expand our development, regulatory, manufacturing, marketing and sales capabilities. We have used substantial funds to develop our technology and product candidates and will require significant funds to conduct further research and development and preclinical testing and clinical trials of our product candidates, to seek regulatory approvals for our product candidates and to manufacture and market products, if any, which are approved for commercial sale. In addition, we expect to incur additional costs associated with operating as a public company.

Since our inception, we have invested a significant portion of our efforts and financial resources in research and development activities for our two product candidates STRO-001, our initial clinical program, and STRO-002, our late-stage preclinical program, and the development of our in-house manufacturing capabilities. Clinical trials for our product candidates will require substantial funds to complete. As of September 30, 2018, we had $123.0 million in cash, cash equivalents and marketable securities. We expect to incur substantial expenditures in the foreseeable future as we seek to advance STRO-001 and STRO-002 and any future product candidates through clinical development, manufacturing, the regulatory approval process and, if approved, commercial launch activities, as well as in connection with the continued development of our manufacturing capabilities. Based on our current operating plan, we believe that our available cash, cash equivalents and marketable securities will be sufficient to fund our operations through at least the next 12 months. However, our future capital requirements and the period for which we expect our existing resources to support our operations may vary significantly from what we expect and we may need to seek additional funds sooner than planned. Our monthly spending levels vary based on new and ongoing research and development and other corporate activities. Because the length of time and activities associated with successful research and development of our product candidates is highly uncertain, we are unable to estimate the actual funds we will require for development and any marketing and commercialization activities for approved products. The timing and amount of our operating expenditures will depend largely on:

- the timing and progress of preclinical and clinical development activities;
- the costs associated with the development of our internal manufacturing facility and processes;
- the number and scope of preclinical and clinical programs we decide to pursue;
- the progress of the development efforts of parties with whom we have entered or may in the future enter into collaborations and research and development agreements;
- the timing and amount of milestone and other payments we may receive under our collaboration agreements;
- our ability to maintain our current licenses and research and development programs and to establish new collaboration arrangements;
- the costs involved in prosecuting and enforcing patent and other intellectual property claims;
- the costs of manufacturing our product candidates and those of our collaborators using our proprietary XpressCF+™ Platform;
- the cost and timing of regulatory approvals;
- the cost of commercialization activities if our product candidates or any future product candidates are approved for sale, including marketing, sales and distribution costs; and
- our efforts to enhance operational systems and hire additional personnel, including personnel to support development of our product candidates and satisfy our obligations as a public company.

If we are unable to obtain funding on a timely basis or on acceptable terms, we may have to delay, reduce or terminate our research and development programs and preclinical studies or clinical trials, limit strategic opportunities or undergo reductions in our workforce or other corporate restructuring activities. We also could be required to seek funds through arrangements with collaborators or others that may require us to relinquish rights to some of our technologies or product candidates that we would otherwise pursue on our own. We do not expect to realize revenue from sales of commercial products or royalties from licensed products in the foreseeable future, if at all, and, in no event, before our product candidates are clinically tested, approved for commercialization and successfully marketed. To date, we have primarily financed our operations through payments received under our collaboration agreements, the sale of equity securities and debt financing. We will be required to seek additional funding in the future and currently intend to do so through additional collaborations and/or licensing agreements, public or private equity offerings or debt financings, credit or loan facilities, or a combination of one or more of these funding sources. Our ability to raise additional funds will depend

on financial, economic and other factors, many of which are beyond our control. Additional funds may not be available to us on acceptable terms or at all. Subject to limited exceptions, the loan and security agreement, or the Loan and Security Agreement, we entered into with Oxford and SVB in August 2017 under which we borrowed $15.0 million prohibits us from incurring indebtedness without the prior written consent of Oxford or SVB. If we raise addi tional funds by issuing equity securities, our stockholders will suffer dilution and the terms of any financing may adversely affect the rights of our stockholders. If we raise additional funds through licensing or collaboration arrangements with third parties, we may have to relinquish valuable rights to our product candidates, or grant licenses on terms that are not favorable to us. In addition, as a condition to providing additional funds to us, future investors may demand, and may be granted, rights superior to those of existing stockholders. Our current debt financing involves, and future debt financings, if available, are likely to involve, restrictive covenants limiting our flexibility in conducting future business activities, and, in the event of insolvency, debt holders would be repaid before holders of our equity securities received any distribution of our corporate assets. Failure to obtain capital when needed on acceptable terms may force us to delay, limit or terminate our product development and commercialization of our current or future product candidates, which could have a material and adverse effect on our business, financial condition, results of operations and prospects.

Our product candidates are in early stages of development and may fail in development or suffer delays that materially and adversely affect their commercial viability. If we or our collaborators are unable to complete development of or commercialize our product candidates or experience significant delays in doing so, our business will be materially harmed.

We have no products on the market and all of our product candidates for cancer therapy are in early stages of development. In particular, our most advanced product candidate, STRO-001, is in the initial stages of dose escalation in clinical trial patients. Additionally, we have programs that are in earlier stages of discovery and preclinical development and may never advance to clinical-stage development. Our ability to achieve and sustain profitability depends on obtaining regulatory approvals for and successfully commercializing our product candidates, either alone or with third parties, and we cannot guarantee you that we will ever obtain regulatory approval for any of our product candidates. We have limited experience in conducting and managing the clinical trials necessary to obtain regulatory approvals, including approval by the U.S. Food and Drug Administration, or FDA. Before obtaining regulatory approval for the commercial distribution of our product candidates, we or an existing or future collaborator must conduct extensive preclinical tests and clinical trials to demonstrate the safety and efficacy in humans of our product candidates.

We may not have the financial resources to continue development of, or to modify existing or enter into new collaborations for, a product candidate if we experience any issues that delay or prevent regulatory approval of, or our ability to commercialize, product candidates, including:

- negative or inconclusive results from our clinical trials or the clinical trials of others for product candidates similar to ours, leading to a decision or requirement to conduct additional preclinical testing or clinical trials or abandon a program;
- product-related side effects experienced by patients in our clinical trials or by individuals using drugs or therapeutic biologics similar to our product candidates;
- difficulty achieving successful continued development of our internal manufacturing processes, including process development and scale-up activities to supply products for preclinical studies, clinical trials and commercial sale;
- our inability to transfer successfully our manufacturing expertise and techniques to third-party contract manufacturers;
- inability of us or any third-party contract manufacturer to scale up manufacturing of our product candidates and those of our collaborators to supply the needs of clinical trials and commercial sales, and to manufacture such products in conformity with regulatory requirements using our proprietary XpressCF+™ Platform;
- delays in submitting investigational new drug applications, or INDs, or comparable foreign applications or delays or failures in obtaining the necessary approvals from regulators to commence a clinical trial, or a suspension or termination of a clinical trial once commenced;
- conditions imposed by the FDA or comparable foreign authorities regarding the scope or design of our clinical trials;
- delays in enrolling patients in our clinical trials;
- high drop-out rates of our clinical trial patients;
- inadequate supply or quality of product candidate components or materials or other supplies necessary for the conduct of our clinical trials;

- inability to obtain alternative sources of supply for which we have a single source for product candidate components or materials;
- greater than anticipated costs of our clinical trials;
- harmful side effects or inability of our product candidates to meet efficacy endpoints during clinical trials;
- failure to demonstrate a benefit-risk profile acceptable to the FDA or other regulatory agencies;
- unfavorable FDA or other regulatory agency inspection and review of one or more of our clinical trial sites or manufacturing facilities;
- failure of our third-party contractors or investigators to comply with regulatory requirements or otherwise meet their contractual obligations in a timely manner, or at all;
- delays and changes in regulatory requirements, policy and guidelines, including the imposition of additional regulatory oversight around clinical testing generally or with respect to our technology in particular; or
- varying interpretations of our data by the FDA and similar foreign regulatory agencies.

We or our collaborators' inability to complete development of or commercialize our product candidates or significant delays in doing so due to one or more of these factors, could have a material and adverse effect on our business, financial condition, results of operations and prospects.

Our business is dependent on the success of our product candidates based on our proprietary XpressCF+™ Platform and, in particular, our lead product candidates, STRO-001 and STRO-002. Existing and future preclinical studies and clinical trials of our product candidates may not be successful. If we are unable to commercialize our product candidates or experience significant delays in doing so, our business will be materially harmed.

We have invested a significant portion of our efforts and financial resources in the development of our proprietary XpressCF+™ Platform and our lead product candidates, STRO-001 and STRO-002. Our ability to generate commercial product revenues, which we do not expect will occur for many years, if ever, will depend heavily on the successful development and eventual commercialization of STRO-001 and STRO-002. We have not previously submitted a new drug application, or NDA, or a biologics license application, or BLA, to the FDA, or similar regulatory approval filings to comparable foreign authorities, for any product candidate, and we cannot be certain that our product candidates will be successful in clinical trials or receive regulatory approval. Further, our product candidates may not receive regulatory approval even if they are successful in clinical trials. If we do not receive regulatory approvals for our product candidates, we may not be able to continue our operations. Even if we successfully obtain regulatory approvals to market our product candidates, our revenues will be dependent, in part, upon the size of the markets in the territories for which we gain regulatory approval and have commercial rights. If the markets for patient subsets that we are targeting are not as significant as we estimate, we may not generate significant revenues from sales of such products, if approved.

We plan to seek regulatory approval to commercialize our product candidates both in the United States and in selected foreign countries. While the scope of regulatory approvals generally is similar in other countries, in order to obtain separate regulatory approvals in other countries, we must comply with numerous and varying regulatory requirements of such countries regarding safety and efficacy. Other countries also have their own regulations governing, among other things, clinical trials and commercial sales, as well as pricing and distribution of our product candidates, and we may be required to expend significant resources to obtain regulatory approval and to comply with ongoing regulations in these jurisdictions.

The success of STRO-001 and STRO-002 and our other product candidates will depend on many factors, including the following:

- successful enrollment of patients in, and the completion of, our clinical trials;
- receiving required regulatory approvals for the development and commercialization of our product candidates;
- establishing our commercial manufacturing capabilities or making arrangements with third-party manufacturers;
- obtaining and maintaining patent and trade secret protection and non-patent exclusivity for our product candidates and their components;
- enforcing and defending our intellectual property rights and claims;
- achieving desirable therapeutic properties for our product candidates' intended indications;
- launching commercial sales of our product candidates, if and when approved, whether alone or in collaboration with third parties;
- acceptance of our product candidates, if and when approved, by patients, the medical community and third-party payors;

- effectively competing with other therapies; and
- maintaining an acceptable safety profile of our product candidates through clinical trials and following regulatory approval.

If we do not achieve one or more of these factors in a timely manner or at all, we could experience significant delays or an inability to successfully commercialize our product candidates, which would materially harm our business.

Additionally, we have created a benchmark folate receptor-alpha, or FolRα, targeting an antibody drug conjugate, or ADC, using conventional technology that results in a heterogeneous ADC mixture. We have compared STRO-002 to this benchmark molecule in multiple preclinical models. We believe the results of these tests help us understand how the therapeutic index of STRO-002 compares to competitors. However, we cannot be certain that our benchmark molecule is the same as the molecule we are attempting to recreate, and the results of the tests comparing our benchmark molecule to STRO-002 may be different than the actual results of a head-to-head test of STRO-002 against a competitor molecule. Additional preclinical and clinical testing will be needed to evaluate the therapeutic index of STRO-002 and to understand its therapeutic potential relative to other product candidates in development. While we believe our ADCs may be superior to other investigative agents in development, without head-to-head comparative data, we will not be able to make claims of superiority to other products in our promotional materials, if our product candidates are approved.

If we do not achieve our projected development goals in the time frames we announce and expect, the commercialization of our products may be delayed and, as a result, our stock price may decline.

From time to time, we estimate the timing of the anticipated accomplishment of various scientific, clinical, regulatory and other product development goals, which we sometimes refer to as milestones. These milestones may include the commencement or completion of scientific studies and clinical trials and the submission of regulatory filings. From time to time, we may publicly announce the expected timing of some of these milestones. All of these milestones are and will be based on numerous assumptions. The actual timing of these milestones can vary dramatically compared to our estimates, in some cases for reasons beyond our control. If we do not meet these milestones as publicly announced, or at all, the commercialization of our products may be delayed or never achieved and, as a result, our stock price may decline.

Our approach to the discovery and development of our therapeutic treatments is based on novel technologies that are unproven and may not result in marketable products.

We are developing a pipeline of product candidates using our proprietary XpressCF+™ Platform. We believe that product candidates identified with our product discovery platform may offer an improved therapeutic approach by taking advantage of precision design and rapid empirical optimization, thereby reducing the dose-limiting toxic effects associated with existing products. However, the scientific research that forms the basis of our efforts to develop product candidates based on our XpressCF+™ Platform is ongoing. Further, the scientific evidence to support the feasibility of developing therapeutic treatments based on our XpressCF+™ Platform is both preliminary and limited.

To date, we have tested our first clinical stage product candidate, STRO-001, in a limited number of clinical trial patients. We may ultimately discover that our XpressCF+™ Platform and any product candidates resulting therefrom do not possess certain properties required for therapeutic effectiveness. XpressCF+™ product candidates may also be unable to remain stable in the human body for the period of time required for the drug to reach the target tissue or they may trigger immune responses that inhibit the ability of the product candidate to reach the target tissue or that cause adverse side effects in humans. We currently have only limited data, and no conclusive evidence, to suggest that we can introduce these necessary properties into these product candidates derived from our XpressCF+™ Platform. We may spend substantial funds attempting to introduce these properties and may never succeed in doing so. In addition, product candidates based on our XpressCF+™ Platform may demonstrate different chemical and pharmacological properties in patients than they do in laboratory studies. Although our XpressCF+™ Platform and certain product candidates have produced successful results in animal studies, they may not demonstrate the same chemical and pharmacological properties in humans and may interact with human biological systems in unforeseen, ineffective or harmful ways. As a result, we may never succeed in developing a marketable product, we may not become profitable and the value of our common stock will decline.

The regulatory approval process for novel product candidates such as ours can be more expensive and take lon ger than for other, better known or extensively studied product candidates. We are not aware of any company currently developing a therapeutic using our approach to ADC development and no regulatory authority has granted approval for such a therapeutic. We believe the FDA has limited experience with therapeutics in oncology or other disease areas developed in cell-free-based synthesis systems, which may increase the complexity, uncertainty and length of the regulatory approval process for our product candidates. For example, our XpressCF+™ ADC product candidates contain cleavable or non-cleavable linker-warhead combinations or novel warheads that may result in unforeseen events when administered in a human. We and our existing or future collaborators may never receive approval to market and commercialize any product candidate. Even if we or an existing or future collaborator obtains regulatory approval, the approval may be for targets, disease indications or patient populations that are not as broad as we intended or desired or may require labeling that includes significant use or distribution restrictions or safety warnings. We or an existing or future collaborator may be required to perform additional or unanticipated clinical trials to obtain approval or be subject to post-marketing testing requirements to maintain regulatory approval. If the products resulting from our XpressCF +™ Platform prove to be ineffective, unsafe or commercially unviable, our entire platform and pipeline would have little, if any, value, which would have a material and adverse effect on our business, financial condition, results of operations and prospects.

Results of preclinical studies and early clinical trials may not be predictive of results of future clinical trials.

The outcome of preclinical studies and early clinical trials may not be predictive of the success of later clinical trials, and interim results of clinical trials do not necessarily predict success in future clinical trials. Many companies in the pharmaceutical and biotechnology industries have suffered significant setbacks in late-stage clinical trials after achieving positive results in earlier development, and we could face similar setbacks. The design of a clinical trial can determine whether its results will support approval of a product and flaws in the design of a clinical trial may not become apparent until the clinical trial is well advanced. While certain relevant members of our company have significant clinical experience, we in general have limited experience in designing clinical trials and may be unable to design and execute a clinical trial to support marketing approval. In addition, preclinical and clinical data are often susceptible to varying interpretations and analyses. Many companies that believed their product candidates performed satisfactorily in preclinical studies and clinical trials have nonetheless failed to obtain marketing approval for the product candidates. Even if we, or future collaborators, believe that the results of clinical trials for our product candidates warrant marketing approval, the FDA or comparable foreign regulatory authorities may disagree and may not grant marketing approval of our product candidates.

In some instances, there can be significant variability in safety or efficacy results between different clinical trials of the same product candidate due to numerous factors, including changes in trial procedures set forth in protocols, differences in the size and type of the patient populations, changes in and adherence to the dosing regimen and other clinical trial protocols and the rate of dropout among clinical trial patients. If we fail to receive positive results in clinical trials of our product candidates, the development timeline and regulatory approval and commercialization prospects for our most advanced product candidates, and, correspondingly, our business and financial prospects would be negatively impacted.

The market may not be receptive to our product candidates based on a novel therapeutic modality, and we may not generate any future revenue from the sale or licensing of product candidates.

Even if regulatory approval is obtained for a product candidate, we may not generate or sustain revenue from sales of the product due to factors such as whether the product can be sold at a competitive cost, competition in the therapeutic area(s) we have received or may receive approval for, and whether it will otherwise be accepted in the market. Historically, there have been concerns regarding the safety and efficacy of ADCs, and an ADC drug was voluntarily withdrawn from the market. These historical concerns may negatively impact the perception market participants have on ADCs, including our product candidates. Additionally, the product candidates that we are developing are based on our proprietary XpressCF+™ Platform, which is a new technology. Market participants with significant influence over acceptance of new treatments, such as physicians and third- party payors, may not adopt an ADC product, or a product or treatment based on our novel cell-free production technologies, and we may not be able to convince the medical community and third-party payors to accept and use, or to provide favorable reimbursement for, any product candidates developed by us or our existing or future collaborators. Market acceptance of our product candidates will depend on, among other factors:

- the timing of our receipt of any marketing and commercialization approvals;
- the terms of any approvals and the countries in which approvals are obtained;
- the safety and efficacy of our product candidates;
- the prevalence and severity of any adverse side effects associated with our product candidates;
- limitations or warnings contained in any labeling approved by the FDA or other regulatory authority;
- relative convenience and ease of administration of our product candidates;

- the willingness of patients to accept any new methods of administration;
- the success of our physician education programs;
- the availability of coverage and adequate reimbursement from government and third-party payors;
- the pricing of our products, particularly as compared to alternative treatments; and
- the availability of alternative effective treatments for the disease indications our product candidates are intended to treat and the relative risks, benefits and costs of those treatments.

Because our product candidates are based on new technology, we expect that they will require extensive research and development and have substantial manufacturing and processing costs. In addition, our estimates regarding potential market size for any indication may be materially different from what we discover to exist at the time we commence commercialization, if any, for a product, which could result in significant changes in our business plan and have a material adverse effect on our business, financial condition, results of operations and prospects. Moreover, if any product candidate we commercialize fails to achieve market acceptance, it could have a material and adverse effect on our business, financial condition, results of operations and prospects.

We have entered, and may in the future seek to enter, into collaborations with third parties for the development and commercialization of our product candidates using our XpressCF+™ Platform. If we fail to enter into such collaborations, or such collaborations are not successful, we may not be able to capitalize on the market potential of our XpressCF+™ Platform and resulting product candidates.

Since 2014, we have entered into collaborations with Merck Sharp & Dohme Corp., a subsidiary of Merck & Co., Inc., Kenilworth, NJ, USA, or Merck, Celgene Corporation, or Celgene, and Merck KGaA, Darmstadt, Germany (operating in the United States and Canada under the name “EMD Serono”) to develop certain cancer and other therapeutics. In addition, we may in the future seek third-party collaborators for research, development and commercialization of other therapeutic technologies or product candidates. Biopharmaceutical companies are our prior and likely future collaborators for any marketing, distribution, development, licensing or broader collaboration arrangements. With respect to our existing collaboration agreements, and what we expect will be the case with any future collaboration agreements, we have and would expect to have limited control over the amount and timing of resources that our collaborators dedicate to the development or commercialization of our product candidates. Moreover, our ability to generate revenues from these arrangements will depend on our collaborators’ abilities to successfully perform the functions assigned to them in these arrangements.

Collaborations involving our product candidates currently pose, and will continue to pose, the following risks to us:

- collaborators have significant discretion in determining the efforts and resources that they will apply to these collaborations;
- collaborators may not pursue development and commercialization of our product candidates or may elect not to continue or renew development or commercialization programs based on preclinical studies or clinical trial results, changes in the collaborators’ strategic focus or available funding, or external factors such as an acquisition that diverts resources or creates competing priorities;
- collaborators may delay clinical trials, provide insufficient funding for a clinical trial program, stop a clinical trial or abandon a product candidate, repeat or conduct new clinical trials or require a new formulation of a product candidate for clinical testing;
- collaborators could independently develop, or develop with third parties, products that compete directly or indirectly with our product candidates if the collaborators believe that competitive products are more likely to be successfully developed or can be commercialized under terms that are more economically attractive than ours;
- collaborators with marketing and distribution rights to one or more products may not commit sufficient resources to the marketing and distribution of such product or products;
- collaborators may not properly maintain or defend our intellectual property rights or may use our proprietary information in such a way as to invite litigation that could jeopardize or invalidate our intellectual property or proprietary information or expose us to litigation or potential liability;
- collaborators may infringe the intellectual property rights of third parties, which may expose us to litigation and potential liability;

- disputes may arise between the collaborators and us that result in the delay or termination of the research, development or commercialization of our product candidates or that result in costly litigation or arbitration that diverts management attention and resources; and
- collaborations may be terminated and, if terminated, may result in a need for additional capital to pursue further development or commercialization of the applicable product candidates.

As a result of the foregoing, our current and any future collaboration agreements may not lead to development or commercialization of our product candidates in the most efficient manner or at all. Moreover, if a collaborator of ours were to be involved in a business combination, the continued pursuit and emphasis on our product development or commercialization program could be delayed, diminished or terminated. Any failure to successfully develop or commercialize our product candidates pursuant to our current or any future collaboration agreements could have a material and adverse effect on our business, financial condition, results of operations and prospects.

To date, no product developed on a cell-free manufacturing platform has received approval from the FDA, so the requirements for the manufacturing of products using our XpressCF+™ Platform are uncertain.

We have invested in our own current Good Manufacturing Practices, or cGMP, compliant manufacturing facility in San Carlos, California. In this facility, we are developing and implementing novel cell-free production technologies to supply our planned preclinical and clinical trials. However, before we may initiate a clinical trial or commercialize any of our product candidates, we must demonstrate to the FDA that the chemistry, manufacturing and controls for our product candidates meet applicable requirements, and in the European Union, or EU, a manufacturing authorization must be obtained from the appropriate EU regulatory authorities. The FDA has allowed Phase 1 clinical trial use of our product candidate STRO-001, a portion of which is manufactured in our San Carlos manufacturing facility; however, because no product manufactured on a cell-free manufacturing platform has yet been approved in the United States, there is no manufacturing facility that has demonstrated the ability to comply with FDA requirements for later stage clinical development or commercialization, and, therefore, the timeframe for demonstrating compliance to the FDA's satisfaction is uncertain. Delays in establishing that our manufacturing process and facility comply with cGMPs or disruptions in our manufacturing processes, implementation of novel in-house technologies or scale-up activities, may delay or disrupt our development efforts.

We expect that development of our own manufacturing facility will provide us with enhanced control of material supply for preclinical studies, clinical trials and the commercial market, enable the more rapid implementation of process changes and allow for better long-term margins. However, we have limited experience as a company in establishing and operating a manufacturing facility and there exist only a small number of contract manufacturing organizations, or CMOs, with the experience necessary to manufacture our product candidates. We may have difficulty hiring experts for internal manufacturing or finding and maintaining relationships with external CMOs and, accordingly, our production capacity could be limited.

Our existing collaborations with Merck, Celgene and EMD Serono are important to our business. If our collaborators cease development efforts under our existing or future collaboration agreements, or if any of those agreements are terminated, these collaborations may fail to lead to commercial products and we may never receive milestone payments or future royalties under these agreements.

We have entered into collaborations with other biotechnology companies to develop several of our product candidates, and such collaborations currently represent a significant portion of our product pipeline and discovery and preclinical programs. Substantially all of our revenue to date has been derived from our existing collaboration agreements with Merck, Celgene and EMD Serono, and a significant portion of our future revenue and cash resources is expected to be derived from these agreements or other similar agreements into which we may enter in the future. Revenue from research and development collaborations depends upon continuation of the collaborations, payments for research and development services and product supply, and the achievement of milestones, contingent payments and royalties, if any, derived from future products developed from our research. If we are unable to successfully advance the development of our product candidates or achieve milestones, revenue and cash resources from milestone payments under our collaboration agreements will be substantially less than expected.

We are unable to predict the success o f our collaborations and we may not realize the anticipated benefits of our strategic collaborations. Our collaborators have discretion in determining and directing the efforts and resources, including the ability to discontinue all efforts and resources, they apply to the development and, if approval is obtained, commercialization and marketing of the product candidates covered by such collaborations. As a result, our collaborators may elect to de-prioritize our programs, change their strategic focus or pursue alternative technologies in a manner that results in reduced, delayed or no revenue to us. Our collaborators may have other marketed products and product candidates under collaboration with other companies, including some of our competitors, and their corporate objectives may not be consistent with our best interests. Our collaborators may also be unsuccessful in developing or commercializing our products. If our collaborations are unsuccessful, our business, financial condition, results of operations and prospects could be adversely affected. In addition, any dispute or litigation proceedings we may have with our collaborators in the future could delay development programs, create uncertainty as to ownership of intellectual property rights, distract management from other business activities and generate substantial expense.

Moreover, to the extent that any of our existing or future collaborators were to terminate a collaboration agreement, we may be forced to independently develop these product candidates, including funding preclinical studies or clinical trials, assuming marketing and distribution costs and defending intellectual property rights, or, in certain instances, abandon product candidates altogether, any of which could result in a change to our business plan and have a material adverse effect on our business, financial condition, results of operations and prospects.

We may not successfully engage in strategic transactions, including any additional collaborations we seek, which could adversely affect our ability to develop and commercialize product candidates, impact our cash position, increase our expenses and present significant distractions to our management.

From time to time, we may consider strategic transactions, such as additional collaborations, acquisitions of companies, asset purchases and out- or in-licensing of product candidates or technologies that we believe will complement or augment our existing business. In particular, we will evaluate and, if strategically attractive, seek to enter into additional collaborations, including with major biotechnology or biopharmaceutical companies. The competition for collaborators is intense, and the negotiation process is time-consuming and complex. Any new collaboration may be on terms that are not optimal for us, and we may not be able to maintain any new collaboration if, for example, development or approval of a product candidate is delayed, sales of an approved product candidate do not meet expectations or the collaborator terminates the collaboration. In addition, there have been a significant number of recent business combinations among large pharmaceutical companies that have resulted in a reduced number of potential future strategic partners. Our ability to reach a definitive agreement for a collaboration will depend, among other things, upon our assessment of the strategic partner's resources and expertise, the terms and conditions of the proposed collaboration and the proposed strategic partner's evaluation of a number of factors. These factors may include the design or results of clinical trials, the likelihood of approval by the FDA or similar regulatory authorities outside the United States, the potential market for the subject product candidate, the costs and complexities of manufacturing and delivering such product candidate to patients, the potential of competing products, the existence of uncertainty with respect to our ownership of technology, which can exist if there is a challenge to such ownership without regard to the merits of the challenge and industry and market conditions generally. Moreover, if we acquire assets with promising markets or technologies, we may not be able to realize the benefit of acquiring such assets due to an inability to successfully integrate them with our existing technologies and we may encounter numerous difficulties in developing, manufacturing and marketing any new products resulting from a strategic acquisition that delay or prevent us from realizing their expected benefits or enhancing our business.

We cannot assure you that following any such collaboration, or other strategic transaction, we will achieve the expected synergies to justify the transaction. For example, such transactions may require us to incur non-recurring or other charges, increase our near- and long-term expenditures and pose significant integration or implementation challenges or disrupt our management or business. These transactions would entail numerous operational and financial risks, including exposure to unknown liabilities, disruption of our business and diversion of our management's time and attention in order to manage a collaboration or develop acquired products, product candidates or technologies, incurrence of substantial debt or dilutive issuances of equity securities to pay transaction consideration or costs, higher than expected collaboration, acquisition or integration costs, write-downs of assets or goodwill or impairment charges, increased amortization expenses, difficulty and cost in facilitating the collaboration or combining the operations and personnel of any acquired business, impairment of relationships with key suppliers, manufacturers or customers of any acquired business due to changes in management and ownership and the inability to retain key employees of any acquired business. Also, such strategic alliance, joint venture or acquisition may be prohibited. For example, our Loan and Security Agreement, in the absence of SVB's prior written consent, restricts our ability to pursue certain mergers, acquisitions, amalgamations or consolidations that we may believe to be in our best interest.

Accordingly, although there can be no assurance that we will undertake or successfully complete any transactions of the nature described above, any transactions that we do complete may be subject to the foregoing or other risks and would have a material and adverse effect on our business, financial condition, results of operations and prospects. Conversely, any failure to enter any additional collaboration or other strategic transaction that would be beneficial to us could delay the development and potential commercialization of our product candidates and have a negative impact on the competitiveness of any product candidate that reaches market.

We expect to rely on third parties to conduct certain of our preclinical studies or clinical trials. If those third parties do not perform as contractually required, fail to satisfy regulatory or legal requirements or miss expected deadlines, our development program could be delayed with potentially material and adverse effects on our business, financial condition, results of operations and prospects.

We have relied in some cases and intend to rely in the future on third-party clinical investigators, clinical research organizations, or CROs, clinical data management organizations and consultants to assist or provide the design, conduct, supervision and monitoring of preclinical studies and clinical trials of our product candidates. Because we intend to rely on these third parties and will not have the ability to conduct all preclinical studies or clinical trials independently, we will have less control over the timing, quality and other aspects of preclinical studies and clinical trials than we would have had we conducted them on our own. These investigators, CROs and consultants will not be our employees and we will have limited control over the amount of time and resources that they dedicate to our programs. These third parties may have contractual relationships with other entities, some of which may be our competitors, which may draw time and resources from our programs. The third parties with which we may contract might not be diligent, careful or timely in conducting our preclinical studies or clinical trials, resulting in the preclinical studies or clinical trials being delayed or unsuccessful.

If we cannot contract with acceptable third parties on commercially reasonable terms, or at all, or if these third parties do not carry out their contractual duties, satisfy legal and regulatory requirements for the conduct of preclinical studies or clinical trials or meet expected deadlines, our clinical development programs could be delayed and otherwise adversely affected. In all events, we will be responsible for ensuring that each of our preclinical studies and clinical trials are conducted in accordance with the general investigational plan and protocols for the trial. The FDA requires preclinical studies to be conducted in accordance with good laboratory practices and clinical trials to be conducted in accordance with good clinical practices, including for designing, conducting, recording and reporting the results of preclinical studies and clinical trials to assure that data and reported results are credible and accurate and that the rights, integrity and confidentiality of clinical trial participants are protected. Our reliance on third parties that we do not control will not relieve us of these responsibilities and requirements. Any adverse development or delay in our preclinical studies or clinical trials as a result of our reliance on third parties could have a material and adverse effect on our business, financial condition, results of operations and prospects.

If we are unable to obtain sufficient raw and intermediate materials on a timely basis or if we experience other manufacturing or supply difficulties, our business may be adversely affected.

The manufacture of certain of our product candidates requires the timely delivery of sufficient amounts of raw and intermediate materials. We work closely with our suppliers to ensure the continuity of supply, but cannot guarantee these efforts will always be successful. Further, while efforts are made to diversify our sources of raw and intermediate materials, in certain instances we acquire raw and intermediate materials from a sole supplier. While we believe that alternative sources of supply exist where we rely on sole supplier relationships, there can be no assurance that we will be able to quickly establish additional or replacement sources for some materials. A reduction or interruption in supply, and an inability to develop alternative sources for such supply, could adversely affect our ability to manufacture our product candidates in a timely or cost-effective manner.

We currently manufacture a portion of our product candidates internally and also rely on third-party manufacturing and supply partners to supply components of our product candidates. Our inability to manufacture sufficient quantities of our product candidates, or the loss of our third-party suppliers, or our or their failure to comply with applicable regulatory requirements or to supply sufficient quantities at acceptable quality levels or prices, or at all, would materially and adversely affect our business.

Manufacturing is a vital component of our business strategy. To ensure timely and consistent product supply we currently use a hybrid product supply approach wherein certain elements of our product candidates are manufactured internally at our manufacturing facilities in San Carlos, California, and other elements are manufactured at qualified third-party CMOs. Since our own manufacturing facilities may be limited or unable to manufacture certain of our preclinical and clinical trial product materials and supplies, we rely on third-party contract manufacturers to manufacture such clinical trial product materials and supplies for our or our collaborator's needs. There can be no assurance that our preclinical and clinical development product supplies will not be limited, interrupted, or of satisfactory quality or continue to be available at acceptable prices. In particular, any replacement of our manufacturer could require significant effort and expertise because there may be a limited number of qualified replacements.

The manufacturing process for a product candidate is subject to FDA and foreign regulatory authority review. We, and our suppliers and manufacturers, must meet applicable manufacturing requirements and undergo rigorous facility and process validation tests required by regulatory authorities in order to comply with regulatory standards, such as cGMPs. If we or our contract manufacturers cannot successfully manufacture material that conforms to our specifications and the strict regulatory requirements of the FDA or comparable foreign regulatory authorities, we may not be able to rely on our or their manufacturing facilities for the manufacture of elements of our product candidates. Moreover, we do not control the manufacturing process at our contract manufacturers, and are completely dependent on them for compliance with current regulatory requirements. In the event that any of our manufacturers fails to comply with such requirements or to perform its obligations in relation to quality, timing or otherwise, or if our supply of components or other materials becomes limited or interrupted for other reasons, we may be forced to manufacture the materials ourselves or enter into an agreement with another third party, which we may not be able to do on reasonable terms, if at all. In some cases, the technical skills or technology required to manufacture our product candidates may be unique or proprietary to the original manufacturer and we may have difficulty applying such skills or technology ourselves, or in transferring such to another third party. These factors would increase our reliance on such manufacturer or require us to obtain a license from such manufacturer in order to enable us, or to have another third party, manufacture our product candidates. If we are required to change manufacturers for any reason, we will be required to verify that the new manufacturer maintains facilities and procedures that comply with quality standards and with all applicable regulations and guidelines; and we may be required to repeat some of the development program. The delays associated with the verification of a new manufacturer could negatively affect our ability to develop product candidates in a timely manner or within budget.

We expect to continue to rely on third-party manufacturers if we receive regulatory approval for any product candidate. To the extent that we have existing, or enter into future, manufacturing arrangements with third parties, we will depend on these third parties to perform their obligations in a timely manner consistent with contractual and regulatory requirements, including those related to quality control and assurance. If we are unable to obtain or maintain third-party manufacturing for product candidates, or to do so on commercially reasonable terms, we may not be able to develop and commercialize our product candidates successfully. Our or a third party's failure to execute on our manufacturing requirements and comply with cGMPs could adversely affect our business in a number of ways, including:

- an inability to initiate or continue clinical trials of product candidates under development;
- delay in submitting regulatory applications, or receiving regulatory approvals, for product candidates;
- loss of the cooperation of an existing or future collaborator;
- subjecting third-party manufacturing facilities or our manufacturing facilities to additional inspections by regulatory authorities;
- requirements to cease distribution or to recall batches of our product candidates; and
- in the event of approval to market and commercialize a product candidate, an inability to meet commercial demands for our products.

Additionally, we and our contract manufacturers may experience manufacturing difficulties due to resource constraints or as a result of labor disputes or unstable political environments. If we or our contract manufacturers were to encounter any of these difficulties, our ability to provide our product candidates to patients in pre-clinical and clinical trials, or to provide product for treatment of patients once approved, would be jeopardized.

We, or third-party manufacturers, may be unable to successfully scale-up manufacturing of our product candidates in sufficient quality and quantity, which would delay or prevent us from developing our product candidates and commercializing approved products, if any.

In order to conduct clinical trials of our product candidates, we will need to manufacture them in large quantities. We, or any manufacturing partners, may be unable to successfully increase the manufacturing capacity for any of our product candidates in a timely or cost-effective manner, or at all. In addition, quality issues may arise during scale-up activities. If we, or any manufacturing partners, are unable to successfully scale up the manufacture of our product candidates in sufficient quality and quantity, the development, testing, and clinical trials of that product candidate may be delayed or infeasible, and regulatory approval or commercial launch of any resulting product may be delayed or not obtained, which could significantly harm our business.

The manufacture of biologics is complex and we or our third-party manufacturers may encounter difficulties in production. If we or any of our third-party manufacturers encounter such difficulties, our ability to provide supply of our product candidates for clinical trials, our ability to obtain marketing approval, or our ability to provide supply of our products for patients, if approved, could be delayed or stopped.

Our product candidates are considered to be biologics and the process of manufacturing biologics is complex, time-consuming, highly regulated and subject to multiple risks. We and our contract manufacturers must comply with cGMPs, regulations and guidelines for the manufacturing of biologics used in clinical trials and, if approved, marketed products. To date, we and our contract manufacturers have limited experience in the manufacturing of cGMP batches of our product candidates.

Manufacturing biologics is highly susceptible to product loss due to contamination, equipment failure, improper installation or operation of equipment, vendor or operator error, inconsistency in yields, variability in product characteristics and difficulties in scaling the production process. Even minor deviations from normal manufacturing processes could result in reduced production yields, product defects and other supply disruptions. If microbial, viral or other contaminations are discovered at our manufacturing facilities or those of our third-party manufacturers, such facilities may need to be closed for an extended period of time to investigate and remedy the contamination, which could delay clinical trials and adversely harm our business. Moreover, if the FDA determines that our manufacturing facilities or those of our third-party manufacturers are not in compliance with FDA laws and regulations, including those governing cGMPs, the FDA may deny BLA approval until the deficiencies are corrected or we replace the manufacturer in our BLA with a manufacturer that is in compliance.

In addition, there are risks associated with large scale manufacturing for clinical trials or commercial scale including, among others, cost overruns, potential problems with process scale-up, process reproducibility, stability issues, compliance with cGMPs, lot consistency and timely availability of raw materials. Even if we or our collaborators obtain regulatory approval for any of our product candidates, there is no assurance that manufacturers will be able to manufacture the approved product to specifications acceptable to the FDA or other regulatory authorities, to produce it in sufficient quantities to meet the requirements for the potential launch of the product or to meet potential future demand. If our manufacturers are unable to produce sufficient quantities for clinical trials or for commercialization, commercialization efforts would be impaired, which would have an adverse effect on our business, financial condition, results of operations and prospects.

Scaling up a biologic manufacturing process is a difficult and uncertain task, and we may not be successful in transferring our production system or our third-party manufacturers may not have the necessary capabilities to complete the implementation and development process. If we are unable to adequately validate or scale-up the manufacturing process at our own manufacturing facilities or those of our current manufacturers, we will need to transfer to another manufacturer and complete the manufacturing validation process, which can be lengthy. If we are able to adequately validate and scale-up the manufacturing process for our product candidates at our manufacturing facility or with a contract manufacturer, we will still need to negotiate with such contract manufacturer an agreement for commercial supply and it is not certain we will be able to come to agreement on terms acceptable to us.

We cannot assure you that any stability or other issues relating to the manufacture of any of our product candidates or products will not occur in the future. If we or our third-party manufacturers were to encounter any of these difficulties, our ability to provide any product candidates to patients in planned clinical trials and products to patients, once approved, would be jeopardized. Any delay or interruption in the supply of clinical trial supplies could delay the completion of planned clinical trials, increase the costs associated with maintaining clinical trial programs and, depending upon the period of delay, require us to commence new clinical trials at additional expense or terminate clinical trials completely. Any adverse developments affecting clinical or commercial manufacturing of our product candidates or products may result in shipment delays, inventory shortages, lot failures, product withdrawals or recalls, or other interruptions in the supply of our product candidates or products. We may also have to take inventory write-offs and incur other charges and expenses for

product candidates or products that fail to meet specifications, undertake costly reme diation efforts or seek more costly manufacturing alternatives. Accordingly, failures or difficulties faced at any level of our supply chain could adversely affect our business and delay or impede the development and commercialization of any of our product candidates or products, if approved, and could have an adverse effect on our business, prospects, financial condition and results of operations.

As part of our process development efforts, we also may make changes to our manufacturing processes at various points during development, for various reasons, such as controlling costs, achieving scale, decreasing processing time, increasing manufacturing success rate or other reasons. Such changes carry the risk that they will not achieve their intended objectives, and any of these changes could cause our product candidates to perform differently and affect the results of our ongoing clinical trials or future clinical trials. In some circumstances, changes in the manufacturing process may require us to perform *ex vivo* comparability studies and to collect additional data from patients prior to undertaking more advanced clinical trials. For instance, changes in our process during the course of clinical development may require us to show the comparability of the product used in earlier clinical phases or at earlier portions of a trial to the product used in later clinical phases or later portions of the trial.

We may not be successful in our efforts to use our XpressCF+™ Platform to expand our pipeline of product candidates and develop marketable products.

The success of our business depends in large part upon our ability to identify, develop and commercialize products based on our XpressCF+™ Platform. STRO-001 and STRO-002 are our most advanced clinical and late-stage preclinical programs and our research programs may fail to identify other potential product candidates for clinical development for a number of reasons. Our research methodology may be unsuccessful in identifying potential product candidates or our potential product candidates may be shown to have harmful side effects or may have other characteristics that may make the products unmarketable or unlikely to receive marketing approval. If any of these events occur, we may be forced to abandon our development efforts for a program or for multiple programs, which would materially harm our business and could potentially cause us to cease operations. Research programs to identify new product candidates require substantial technical, financial and human resources. We may focus our efforts and resources on potential programs or product candidates that ultimately prove to be unsuccessful.

We may expend our limited resources to pursue a particular product candidate and fail to capitalize on product candidates that may be more profitable or for which there is a greater likelihood of success.

Because we have limited financial and managerial resources, we focus our research and development efforts on certain selected product candidates. As a result, we may forgo or delay pursuit of opportunities with other product candidates that later prove to have greater commercial potential. Our resource allocation decisions may cause us to fail to capitalize on viable commercial products or profitable market opportunities. Our spending on current and future research and development programs and product candidates for specific indications may not yield any commercially viable product candidates. If we do not accurately evaluate the commercial potential or target market for a particular product candidate, we may relinquish valuable rights to that product candidate through collaboration, licensing or other royalty arrangements in cases in which it would have been more advantageous for us to retain sole development and commercialization rights to such product candidate.

Failure to successfully validate, develop and obtain regulatory approval for companion diagnostics for our product candidates could harm our drug development strategy and operational results.

If companion diagnostics are developed in conjunction with clinical programs, the FDA may require regulatory approval of a companion diagnostic as a condition to approval of the product candidate. For example, if we use a diagnostic test to determine which patients are most likely to benefit from STRO-001 for the treatment of multiple myeloma and non-Hodgkin lymphoma by designing our pivotal trial or trials of STRO-001 in that indication to require that clinical trial patients have elevated CD74 expression as a criterion for enrollment, then we will likely be required to obtain FDA approval or clearance of a companion diagnostic, concurrent with approval of STRO-001, to test for elevated CD74 expression; we may also be required to demonstrate to the FDA the predictive utility of the companion diagnostic—namely, that the diagnostic selects for patients in whom the biologic therapy will be effective or more effective compared to patients not selected for by the diagnostic. Similarly, as we are developing STRO-002 for a potential indication in patients with elevated FOlRα expression levels, we may be required to obtain FDA approval or clearance of a companion diagnostic, concurrent with approval of STRO-002, to test for elevated FOlRα expression. We do not have experience or capabilities in developing or commercializing diagnostics and plan to rely in large part on third parties to perform these functions. We do not currently have any agreement in place with any third party to develop or commercialize companion diagnostics for any of our product candidates. Companion diagnostics are subject to regulation by the FDA and foreign regulatory authorities as medical devices and require separate regulatory approval or clearance prior to commercialization.

If we or our collaborators, or any third party, are unable to successfully develop companion diagnostics for our product candidates, or experience delays in doing so:

- the development of our product candidates may be adversely affected if we are unable to appropriately select patients for enrollment in our planned clinical trials;
- our product candidates may not receive marketing approval if their safe and effective use depends on a companion diagnostic; and
- we may not realize the full commercial potential of any product candidates that receive marketing approval if, among other reasons, we are unable to appropriately identify patients with the specific genetic alterations targeted by our product candidates.

In addition, although we believe genetic testing is becoming more prevalent in the diagnosis and treatment of various diseases and conditions, our product candidates may be perceived negatively compared to alternative treatments that do not require the use of companion diagnostics, either due to the additional cost of the companion diagnostic or the need to complete additional procedures to identify genetic markers prior to administering our product candidates. If any of these events were to occur, our business would be harmed, possibly materially.

We face competition from entities that have developed or may develop product candidates for cancer, including companies developing novel treatments and technology platforms. If these companies develop technologies or product candidates more rapidly than we do or their technologies are more effective, our ability to develop and successfully commercialize product candidates may be adversely affected.

The development and commercialization of drugs and therapeutic biologics is highly competitive. Our product candidates, if approved, will face significant competition and our failure to effectively compete may prevent us from achieving significant market penetration. Most of our competitors have significantly greater resources than we do and we may not be able to successfully compete. We compete with a variety of multinational biopharmaceutical companies, specialized biotechnology companies and emerging biotechnology companies, as well as with technologies and product candidates being developed at universities and other research institutions. Our competitors have developed, are developing or will develop product candidates and processes competitive with our product candidates and processes. Competitive therapeutic treatments include those that have already been approved and accepted by the medical community and any new treatments, including those based on novel technology platforms, that enter the market. We believe that a significant number of products are currently under development, and may become commercially available in the future, for the treatment of conditions for which we are trying, or may try, to develop product candidates. There is intense and rapidly evolving competition in the biotechnology, biopharmaceutical and antibody and immunoregulatory therapeutics fields. While we believe that our XpressCF+™ Platform, associated intellectual property and our scientific and technical know-how give us a competitive advantage in this space, competition from many sources exists or may arise in the future. Our competitors include larger and better funded biopharmaceutical, biotechnological and therapeutics companies, including companies focused on cancer immunotherapies, such as AstraZeneca PLC, Bristol-Myers Squibb Company, or BMS, GlaxoSmithKline PLC, Merck & Co., Inc., Novartis AG, Pfizer Inc., or Pfizer, Roche Holding Ltd, Sanofi S.A and companies focused on ADCs, such as Pfizer, ImmunoGen, Inc., or Immunogen, Seattle Genetics, Inc., or Seattle Genetics, and Genentech, Inc., or Genentech, as well as numerous small companies. Moreover, we also compete with current and future therapeutics developed at universities and other research institutions.

We are aware of several companies that are developing ADCs, cytokine derivatives, bispecific antibodies and cancer immunotherapies. Many of these companies are well-capitalized and, in contrast to us, have significant clinical experience, and may include our existing or future collaborators. In addition, these companies compete with us in recruiting scientific and managerial talent.

Our success will depend partially on our ability to develop and protect therapeutics that are safer and more effective than competing products. Our commercial opportunity and success will be reduced or eliminated if competing products are safer, more effective, or less expensive than the therapeutics we develop.

If our lead product candidates are approved, they will compete with a range of therapeutic treatments that are either in development or currently marketed. Currently marketed oncology drugs and therapeutics range from ADCs, such as Genentech's Kadcyla, to immune checkpoint inhibitors such as BMS's Opdivo to T cell-engager immunotherapies such as Amgen, Inc.'s Blincyto. In addition, numerous compounds are in clinical development for cancer treatment. With respect to B cell-based malignancies, such as multiple myeloma, the most common treatments are chemotherapeutic compounds, radiation therapy, stem cell transplantation and immunomodulating agents. The clinical development pipeline for cancer includes small molecules, antibodies, vaccines, cell therapies and immunotherapies from a variety of companies and institutions.

Many of our competitors have significantly greater financial, technical, manufacturing, marketi ng, sales and supply resources or experience than we have. If we successfully obtain approval for any product candidate, we will face competition based on many different factors, including the safety and effectiveness of our products, the ease with which our products can be administered and the extent to which patients accept relatively new routes of administration, the timing and scope of regulatory approvals for these products, the availability and cost of manufacturing, marketing and sales capabilities, price, reimbursement coverage and patent position. Competing products could present superior treatment alternatives, including by being more effective, safer, less expensive or marketed and sold more effectively than any products we may develop. Competitive products may make any products we develop obsolete or noncompetitive before we recover the expense of developing and commercializing our product candidates. Such competitors could also recruit our employees, which could negatively impact our level of expertise and our ability to execute our business plan.

Any inability to attract and retain qualified key management and technical personnel would impair our ability to implement our business plan.

Our success largely depends on the continued service of key management, advisors and other specialized personnel, including William J. Newell, our chief executive officer, Edward Albini, our chief financial officer, Trevor J. Hallam, Ph.D., our chief scientific officer, Arturo Molina, M.D., our chief medical officer and Shabbir T. Anik, Ph.D., our chief technical operations officer. The loss of one or more members of our management team or other key employees or advisors could delay our research and development programs and have a material and adverse effect on our business, financial condition, results of operations and prospects. The relationships that our key managers have cultivated within our industry make us particularly dependent upon their continued employment with us. We are dependent on the continued service of our technical personnel because of the highly technical nature of our product candidates and XpressCF+™ Platform technologies and the specialized nature of the regulatory approval process. Because our management team and key employees are not obligated to provide us with continued service, they could terminate their employment with us at any time without penalty. Our future success will depend in large part on our continued ability to attract and retain other highly qualified scientific, technical and management personnel, as well as personnel with expertise in clinical testing, manufacturing, governmental regulation and commercialization. We face competition for personnel from other companies, universities, public and private research institutions, government entities and other organizations. If we are unable to continue to attract and retain high-quality personnel, the rate and success at which we can discover and develop product candidates will be limited which could have a material and adverse effect on our business, financial condition, results of operations and prospects.

We will need to grow our organization, and we may experience difficulties in managing our growth and expanding our operations.

As of September 30, 2018, we had 141 full-time employees. As our development and commercialization plans and strategies develop, and as we transition into operating as a public company, we expect to expand our employee base for managerial, operational, financial and other resources. In addition, we have limited experience in product development and have just begun our first clinical trial for our first product candidate. As our product candidates enter and advance through preclinical studies and clinical trials, we will need to expand our development, regulatory and manufacturing capabilities or contract with other organizations to provide these capabilities for us. In the future, we expect to have to manage additional relationships with collaborators or partners, suppliers and other organizations. Our ability to manage our operations and future growth will require us to continue to improve our operational, financial and management controls, reporting systems and procedures. We may not be able to implement improvements to our management information and control systems in an efficient or timely manner and may discover deficiencies in existing systems and controls. Our inability to successfully manage our growth and expand our operations could have a material and adverse effect on our business, financial condition, results of operations and prospects.

If any of our product candidates are approved for marketing and commercialization and we are unable to develop sales, marketing and distribution capabilities on our own or enter into agreements with third parties to perform these functions on acceptable terms, we will be unable to commercialize successfully any such future products.

We currently have no sales, marketing or distribution capabilities or experience. If any of our product candidates are approved, we will need to develop internal sales, marketing and distribution capabilities to commercialize such products, which would be expensive and time consuming, or enter into collaborations with third parties to perform these services. If we decide to market our products directly, we will need to commit significant financial and managerial resources to develop a marketing and sales force with technical expertise and supporting distribution, administration and compliance capabilities. If we rely on third parties with such capabilities to market our products or decide to co-promote products with collaborators, we will need to establish and maintain marketing and distribution arrangements with third parties, and there can be no assurance that we will be able to enter into such arrangements on acceptable terms or at all. In entering into

third-party marketing or distribution arrangements, any revenue we receive will depend upon the efforts of the third parties and there can be no assurance that such third parties will establish adequate sales and distribution capabilities or be successful in gaining market acceptance of any approved product. If we are not successful in commercializing any product approved in the future, either on our own or through third parties, our business, financial condition, results of operations and prospects could be materially and adversely affected.

Our future growth may depend, in part, on our ability to operate in foreign markets, where we would be subject to additional regulatory burdens and other risks and uncertainties.

Our future growth may depend, in part, on our ability to develop and commercialize our product candidates in foreign markets for which we may rely on collaboration with third parties. We are not permitted to market or promote any of our product candidates before we receive regulatory approval from the applicable regulatory authority in that foreign market, and may never receive such regulatory approval for any of our product candidates. To obtain separate regulatory approval in many other countries, we must comply with numerous and varying regulatory requirements of such countries regarding safety and efficacy and governing, among other things, clinical trials and commercial sales, pricing and distribution of our product candidates, and we cannot predict success in these jurisdictions. If we fail to comply with the regulatory requirements in international markets and do not receive applicable marketing approvals, our target market will be reduced and our ability to realize the full market potential of our product candidates will be harmed and our business will be adversely affected. We may not obtain foreign regulatory approvals on a timely basis, if at all. Our failure to obtain approval of any of our product candidates by regulatory authorities in another country may significantly diminish the commercial prospects of that product candidate and our business, financial condition, results of operations and prospects could be materially and adversely affected. Moreover, even if we obtain approval of our product candidates and ultimately commercialize our product candidates in foreign markets, we would be subject to the risks and uncertainties, including the burden of complying with complex and changing foreign regulatory, tax, accounting and legal requirements and reduced protection of intellectual property rights in some foreign countries.

Price controls imposed in foreign markets may adversely affect our future profitability.

In some countries, particularly member states of the EU, the pricing of prescription drugs is subject to governmental control. In these countries, pricing negotiations with governmental authorities can take considerable time after receipt of marketing approval for a product. In addition, there can be considerable pressure by governments and other stakeholders on prices and reimbursement levels, including as part of cost containment measures. Political, economic and regulatory developments may further complicate pricing negotiations, and pricing negotiations may continue after reimbursement has been obtained. Reference pricing used by various EU member states and parallel distribution, or arbitrage between low-priced and high-priced member states, can further reduce prices. In some countries, we or current or future collaborators may be required to conduct a clinical trial or other studies that compare the cost-effectiveness of our therapeutic candidates to other available therapies in order to obtain or maintain reimbursement or pricing approval. Publication of discounts by third-party payors or authorities may lead to further pressure on the prices or reimbursement levels within the country of publication and other countries. If reimbursement of any product candidate approved for marketing is unavailable or limited in scope or amount, or if pricing is set at unsatisfactory levels, our business, financial condition, results of operations or prospects could be materially and adversely affected.

Our business entails a significant risk of product liability and our ability to obtain sufficient insurance coverage could have a material and adverse effect on our business, financial condition, results of operations and prospects.

As we are conducting clinical trials of our product candidates we may be exposed to significant product liability risks inherent in the development, testing, manufacturing and marketing of therapeutic treatments. Product liability claims could delay or prevent completion of our development programs. If we succeed in marketing products, such claims could result in an FDA investigation of the safety and effectiveness of our products, our manufacturing processes and facilities or our marketing programs and potentially a recall of our products or more serious enforcement action, limitations on the approved indications for which they may be used or suspension or withdrawal of approvals. Regardless of the merits or eventual outcome, liability claims may also result in decreased demand for our products, injury to our reputation, costs to defend the related litigation, a diversion of management's time and our resources, substantial monetary awards to trial participants or patients and a decline in our stock price. While we currently have product liability insurance that we believe is appropriate for our stage of development, we may need to obtain higher levels prior to later stages of clinical development or marketing any of our product candidates. Any insurance we have or may obtain may not provide sufficient coverage against potential liabilities. Furthermore, clinical trial and product liability insurance is becoming increasingly expensive. As a result, we may be unable to obtain sufficient insurance at a reasonable cost to protect us against losses caused by product liability claims that could have a material and adverse effect on our business, financial condition, results of operations and prospects.

Our employees may engage in misconduct or other improper activities, including noncompliance with regulatory standards and requirements.

As with all companies, we are exposed to the risk of employee fraud or other misconduct. Misconduct by employees could include intentional failures to comply with FDA regulations, provide accurate information to the FDA, comply with manufacturing standards we may establish, comply with federal and state healthcare fraud and abuse laws and regulations, inappropriately share confidential and proprietary information externally, report financial information or data accurately or disclose unauthorized activities to us. In particular, sales, marketing and business arrangements in the healthcare industry are subject to extensive laws and regulations intended to prevent fraud, kickbacks, self-dealing and other abusive practices. These laws and regulations may restrict or prohibit a wide range of pricing, discounting, marketing and promotion, sales commission, customer incentive programs and other business arrangements. Employee misconduct could also involve the improper use of information obtained in the course of clinical trials, which could result in regulatory sanctions and serious harm to our reputation. It is not always possible to identify and deter employee misconduct, and the precautions we take to detect and prevent this activity may not be effective in controlling unknown or unmanaged risks or losses or in protecting us from governmental investigations or other actions or lawsuits stemming from a failure to be in compliance with such laws or regulations. If any such actions are instituted against us, and we are not successful in defending ourselves or asserting our rights, those actions could have a material and adverse effect on our business, financial condition, results of operations and prospects, including the imposition of significant civil, criminal and administrative penalties, damages, fines, disgorgement, imprisonment, the curtailment or restructuring of our operations, loss of eligibility to obtain approvals from the FDA, exclusion from participation in government contracting, healthcare reimbursement or other government programs, including Medicare and Medicaid, integrity oversight and reporting obligations, or reputational harm.

We depend on our information technology systems, and any failure of these systems, or those of our CROs or other contractors or consultants we may utilize, could harm our business. Security breaches, loss of data, and other disruptions could compromise sensitive information related to our business or prevent us from accessing critical information and expose us to liability, which could adversely affect our business, results of operations, financial condition and prospects.

We collect and maintain information in digital form that is necessary to conduct our business, and we are increasingly dependent on information technology systems and infrastructure to operate our business. In the ordinary course of our business, we collect, store and transmit large amounts of confidential information, including intellectual property, proprietary business information and personal information. It is critical that we do so in a secure manner to maintain the confidentiality and integrity of such confidential information. We have established physical, electronic and organizational measures to safeguard and secure our systems to prevent a data compromise, and rely on commercially available systems, software, tools, and monitoring to provide security for our information technology systems and the processing, transmission and storage of digital information. We have also outsourced elements of our information technology infrastructure, and as a result a number of third-party vendors may or could have access to our confidential information. Our internal information technology systems and infrastructure, and those of our current and any future collaborators, contractors and consultants and other third parties on which we rely, are vulnerable to damage from computer viruses, malware, natural disasters, terrorism, war, telecommunication and electrical failures, cyber-attacks or cyber-intrusions over the Internet, attachments to emails, persons inside our organization, or persons with access to systems inside our organization.

The risk of a security breach or disruption or data loss, particularly through cyber-attacks or cyber intrusion, including by computer hackers, foreign governments and cyber terrorists, has generally increased as the number, intensity and sophistication of attempted attacks and intrusions from around the world have increased. In addition, the prevalent use of mobile devices that access confidential information increases the risk of data security breaches, which could lead to the loss of confidential information or other intellectual property. The costs to us to mitigate network security problems, bugs, viruses, worms, malicious software programs and security vulnerabilities could be significant, and while we have implemented security measures to protect our data security and information technology systems, our efforts to address these problems may not be successful, and these problems could result in unexpected interruptions, delays, cessation of service and other harm to our business and our competitive position. If such an event were to occur and cause interruptions in our operations, it could result in a material disruption of our product development programs. For example, the loss of clinical trial data from completed or ongoing or planned clinical trials could result in delays in our regulatory approval efforts and significantly increase our costs to recover or reproduce the data. Moreover, if a computer security breach affects our systems or results in the unauthorized release of personally identifiable information, our reputation could be materially damaged. In addition, such a breach may require notification to governmental agencies, the media or individuals pursuant to various federal and state privacy and security laws, if applicable, including the Health Insurance Portability and Accountability Act of 1996, or HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act of 2009, or HITECH, and its implementing rules and regulations, as well as regulations promulgated by the Federal Trade Commission and state breach notification laws. We would also be exposed to a risk of loss or litigation and potential liability, which could materially adversely affect our business, results of operations, financial condition and prospects.

Our information technology systems could face serious disruptions that could adversely affect our business.

Our information technology and other internal infrastructure systems, including corporate firewalls, servers, leased lines and connection to the Internet, face the risk of systemic failure that could disrupt our operations. A significant disruption in the availability of our information technology and other internal infrastructure systems could cause interruptions and delays in our research and development and manufacturing work.

The terms of our Loan and Security Agreement require us to meet certain covenants and place restrictions on our operating and financial flexibility. If we raise additional capital through debt financing, the terms of any new debt could further restrict our ability to operate our business.

The Loan and Security Agreement is secured by a lien covering all of our assets, excluding our intellectual property and certain other assets. Subject to the terms of the Loan and Security Agreement, we have the option to prepay all, but not less than all, of the amounts borrowed under the Loan and Security Agreement, subject to certain penalty payments, prior to the August 1, 2021 maturity date, at which time all amounts borrowed will be due and payable.

The Loan and Security Agreement contains customary affirmative and negative covenants, indemnification provisions and events of default. The affirmative covenants include, among others, covenants requiring us to maintain our legal existence and governmental approvals, deliver certain financial reports and maintain certain intellectual property rights. The negative covenants include, among others, restrictions on transferring or licensing our assets, changing our business, incurring additional indebtedness, engaging in mergers or acquisitions, paying dividends or making other distributions, and creating other liens on our assets, in each case subject to customary exceptions. If we default under the Loan and Security Agreement, the lenders will be able to declare all obligations immediately due and payable and take control of our collateral, potentially requiring us to renegotiate our agreement on terms less favorable to us or to immediately cease operations. Further, if we are liquidated, the rights of Oxford and SVB to repayment would be senior to the rights of the holders of our common stock to receive any proceeds from the liquidation. Oxford, acting as collateral agent for the lenders, could declare a default under the Loan and Security Agreement upon the occurrence of any event that Oxford and SVB interpret as a material adverse change as defined under the Loan and Security Agreement, thereby requiring us to repay the loan immediately or to attempt to reverse the declaration of default through negotiation or litigation. Any declaration by the collateral agent of an event of default could significantly harm our business and prospects and could cause the price of our common stock to decline. If we raise any additional debt financing, the terms of such additional debt could further restrict our operating and financial flexibility.

If we do not comply with laws regulating the protection of the environment and health and human safety, our business could be affected adversely.

Our research, development and manufacturing involve the use of hazardous chemicals and materials, including radioactive materials. We maintain quantities of various flammable and toxic chemicals in our facilities in South San Francisco and San Carlos, California that are required for our research, development and manufacturing activities. We are subject to federal, state and local laws and regulations governing the use, manufacture, storage, handling and disposal of these hazardous chemicals and materials. We believe our procedures for storing, handling and disposing these materials in our South San Francisco and San Carlos facilities comply with the relevant guidelines of the two municipalities, the counties of San Francisco and San Mateo, the state of California and the Occupational Safety and Health Administration of the U.S. Department of Labor. Although we believe that our safety procedures for handling and disposing of these materials comply with the standards mandated by applicable regulations, the risk of accidental contamination or injury from these materials cannot be eliminated. If an accident occurs, we could be held liable for resulting damages, which could be substantial. We are also subject to numerous environmental, health and workplace safety laws and regulations, including those governing laboratory procedures, exposure to blood-borne pathogens and the handling of animals and biohazardous materials. Although we maintain workers' compensation insurance to cover us for costs and expenses we may incur due to injuries to our employees resulting from the use of these materials, this insurance may not provide adequate coverage against potential liabilities. While we maintain pollution legal liability insurance for our manufacturing facility in San Carlos, California, we do not maintain insurance for environmental liability or toxic tort claims that may be asserted against us in connection with our storage or disposal of biological or hazardous materials in our other locations. Additional federal, state and local laws and regulations affecting our operations may be adopted in the future. We may incur substantial costs to comply with, and substantial fines or penalties if we violate, any of these laws or regulations.

Our current operations are in two cities in the San F rancisco Bay Area, and we or the third parties upon whom we depend may be adversely affected by earthquakes or other natural disasters and our business continuity and disaster recovery plans may not adequately protect us from a serious disaster.

Our current operations are located in our facilities in South San Francisco and San Carlos, California. Any unplanned event, such as earthquake, flood, fire, explosion, extreme weather condition, medical epidemic, power shortage, telecommunication failure or other natural or manmade accidents or incidents that result in us being unable to fully utilize our facilities, or the manufacturing facilities of our third-party contract manufacturers, may have a material and adverse effect on our ability to operate our business, particularly on a daily basis, and have significant negative consequences on our financial and operating conditions. Loss of access to these facilities may result in increased costs, delays in the development of our product candidates or interruption of our business operations. Earthquakes or other natural disasters could further disrupt our operations, and have a material and adverse effect on our business, financial condition, results of operations and prospects. If a natural disaster, power outage or other event occurred that prevented us from using all or a significant portion of our headquarters, that damaged critical infrastructure, such as our research or manufacturing facilities or the manufacturing facilities of our third-party contract manufacturers, or that otherwise disrupted operations, it may be difficult or, in certain cases, impossible, for us to continue our business for a substantial period of time. The disaster recovery and business continuity plans we have in place may prove inadequate in the event of a serious disaster or similar event. We may incur substantial expenses as a result of the limited nature of our disaster recovery and business continuity plans, which could have a material adverse effect on our business. As part of our risk management policy, we maintain insurance coverage at levels that we believe are appropriate for our business. However, in the event of an accident or incident at these facilities, we cannot assure you that the amounts of insurance will be sufficient to satisfy any damages and losses. If our facilities, or the manufacturing facilities of our third-party contract manufacturers, are unable to operate because of an accident or incident or for any other reason, even for a short period of time, any or all of our research and development programs may be harmed. Any business interruption could have a material and adverse effect on our business, financial condition, results of operations and prospects.

Our ability to utilize our net operating loss carryforwards and certain other tax attributes may be limited.

Under Sections 382 and 383 of the Internal Revenue Code of 1986, as amended, or the Code, if a corporation undergoes an “ownership change” (generally defined as a greater than 50 percentage points change (by value) in the ownership of its equity over a rolling three-year period), the corporation’s ability to use its pre-change net operating loss, or NOL, carryforwards and certain other pre-change tax attributes to offset its post-change income and taxes may be limited. We have experienced such ownership changes in the past and we may experience such ownership changes in the future, some of which are outside our control. As of December 31, 2017, we had federal NOL carryforwards of approximately $91.6 million, and our ability to utilize those NOL carryforwards could be limited by an “ownership change” as described above, which could result in increased tax liability to our company.

On December 22, 2017, the current U.S. presidential administration, signed into law the Tax Cuts and Jobs Act of 2017, or the Tax Reform Act. The legislation significantly changes U.S. tax law by, among other things, lowering the corporate income tax rates. The Tax Reform Act permanently reduces the U.S. corporate income tax rate from a maximum of 35% to a flat 21% rate, effective January 1, 2018. Additionally, the Tax Reform Act will no longer allow deductions for compensation in excess of $1.0 million for certain employees, even if paid as commissions or performance-based compensation. We may be subject to these limitations as provided for under Section 162(m) of the Code in the future. The Tax Reform Act also limits the amount taxpayers are able to deduct for federal NOL carryforwards generated in taxable years beginning after December 31, 2017 to 80% of the taxpayer’s taxable income. The law also generally repeals all carrybacks. However, any NOLs generated in taxable years after December 31, 2017 can be carried forward indefinitely. Losses arising in taxable years beginning before December 31, 2017 may still be carried back two years and are subject to their current expiration period. As of December 31, 2017, we have approximately $91.6 million of federal NOLs that were generated prior to 2018 which will expire at various dates beginning in 2032, if not used to reduce income taxes payable in the future. Federal NOLs generated by us subsequent to 2017 may only offset 80% of taxable income.

The Securities and Exchange Commission, or SEC, staff issued Staff Accounting Bulletin No. 118 to address the application of generally accepted accounting principles in the United States in situations when a registrant does not have the necessary information available, prepared or analyzed (including computations) in reasonable detail to complete the accounting for certain income tax effects of the Tax Reform Act. We have recognized provision tax impacts related to the revaluation of deferred tax assets and liabilities and included this amount in our financial statements for the year ended December 31, 2017. The ultimate impact may differ from these provision amounts, due to, among other things, additional analysis, changes in interpretations and assumptions we have made, additional regulatory guidance that may be issued and actions we may take as a result of the Tax Reform Act.

Risks Related to Intellectual Property

If we are not able to obtain and enforce patent protection for our technologies or product candidates, development and commercialization of our product candidates may be adversely affected.

Our success depends in part on our ability to obtain and maintain patents and other forms of intellectual property rights, including in-licenses of intellectual property rights of others, for our product candidates, methods used to manufacture our product candidates and methods for treating patients using our product candidates, as well as our ability to preserve our trade secrets, to prevent third parties from infringing upon our proprietary rights and to operate without infringing upon the proprietary rights of others. We may not be able to apply for patents on certain aspects of our product candidates in a timely fashion or at all. Further, we may not be able to prosecute all necessary or desirable patent applications, or maintain, enforce and license any patents that may issue from such patent applications, at a reasonable cost or in a timely manner. It is also possible that we will fail to identify patentable aspects of our research and development output before it is too late to obtain patent protection. We may not have the right to control the preparation, filing and prosecution of all patent applications that we license from third parties, or to maintain the rights to patents licensed to third parties. Therefore, these patents and applications may not be prosecuted and enforced in a manner consistent with the best interests of our business. Our existing issued and granted patents and any future patents we obtain may not be sufficiently broad to prevent others from using our technology or from developing competing products and technology. There is no guarantee that any of our pending patent applications will result in issued or granted patents, that any of our issued or granted patents will not later be found to be invalid or unenforceable or that any issued or granted patents will include claims that are sufficiently broad to cover our product candidates or to provide meaningful protection from our competitors. Moreover, the patent position of biotechnology and biopharmaceutical companies can be highly uncertain because it involves complex legal and factual questions. We will be able to protect our proprietary rights from unauthorized use by third parties only to the extent that our current and future proprietary technology and product candidates are covered by valid and enforceable patents or are effectively maintained as trade secrets. If third parties disclose or misappropriate our proprietary rights, it may materially and adversely affect our position in the market.

The U.S. Patent and Trademark Office, or USPTO, and various foreign governmental patent agencies require compliance with a number of procedural, documentary, fee payment and other provisions during the patent process. There are situations in which noncompliance can result in abandonment or lapse of a patent or patent application, resulting in partial or complete loss of patent rights in the relevant jurisdiction. In such an event, competitors might be able to enter the market earlier than would otherwise have been the case. The standards applied by the USPTO and foreign patent offices in granting patents are not always applied uniformly or predictably. For example, there is no uniform worldwide policy regarding patentable subject matter or the scope of claims allowable in biotechnology and biopharmaceutical patents. As such, we do not know the degree of future protection that we will have on our proprietary products and technology. While we will endeavor to try to protect our product candidates with intellectual property rights such as patents, as appropriate, the process of obtaining patents is time consuming, expensive and sometimes unpredictable.

Once granted, patents may remain open to opposition, interference, re-examination, post-grant review, *inter partes* review, nullification or derivation action in court or before patent offices or similar proceedings for a given period after allowance or grant, during which time third parties can raise objections against such initial grant. In the course of such proceedings, which may continue for a protracted period of time, the patent owner may be compelled to limit the scope of the allowed or granted claims thus attacked, or may lose the allowed or granted claims altogether. In addition, there can be no assurance that:

- others will not or may not be able to make, use or sell compounds that are the same as or similar to our product candidates but that are not covered by the claims of the patents that we own or license;
- we or our licensors, or our existing or future collaborators are the first to make the inventions covered by each of our issued patents and pending patent applications that we own or license;
- we or our licensors, or our existing or future collaborators are the first to file patent applications covering certain aspects of our inventions;
- others will not independently develop similar or alternative technologies or duplicate any of our technologies without infringing our intellectual property rights;
- a third party may not challenge our patents and, if challenged, a court would hold that our patents are valid, enforceable and infringed;
- any issued patents that we own or have licensed will provide us with any competitive advantages, or will not be challenged by third parties;
- we may develop additional proprietary technologies that are patentable;

- the patents of others will not have a material or adverse effect on our business, financial condition, results of operations and prospects; and
- our competitors do not conduct research and development activities in countries where we do not have enforceable patent rights and then use the information learned from such activities to develop competitive products for sale in our major commercial markets.

If we or our licensors or collaborators fail to maintain the patents and patent applications covering our product candidates, our competitors might be able to enter the market, which could have a material and adverse effect on our business, financial condition, results of operations and prospects.

If we are unable to protect the confidentiality of our trade secrets, our business and competitive position would be harmed.

In addition to seeking patent protection for certain aspects of our product candidates, we also consider trade secrets, including confidential and unpatented know-how important to the maintenance of our competitive position. We protect trade secrets and confidential and unpatented know-how, in part, by entering into non-disclosure and confidentiality agreements with parties who have access to such knowledge, such as our employees, corporate collaborators, outside scientific collaborators, CROs, contract manufacturers, consultants, advisors and other third parties. We also enter into confidentiality and invention or patent assignment agreements with our employees and consultants that obligate them to maintain confidentiality and assign their inventions to us. Despite these efforts, any of these parties may breach the agreements and disclose our proprietary information, including our trade secrets, and we may not be able to obtain adequate remedies for such breaches. Enforcing a claim that a party illegally disclosed or misappropriated a trade secret is difficult, expensive and time-consuming, and the outcome is unpredictable. In addition, some courts in the United States and certain foreign jurisdictions are less willing or unwilling to protect trade secrets. If any of our trade secrets were to be lawfully obtained or independently developed by a competitor, we would have no right to prevent them from using that technology or information to compete with us. If any of our trade secrets were to be disclosed to or independently developed by a competitor, our competitive position would be harmed which could have a material and adverse effect on our business, financial condition, results of operations and prospects.

Other companies or organizations may challenge our or our licensors' patent rights or may assert patent rights that prevent us from developing and commercializing our products.

Therapeutics in oncology or other disease areas developed in cell-free-based synthesis systems are a relatively new scientific field. We have obtained grants and issuances of, and have obtained a license from a third party on an exclusive basis to, patents related to our proprietary XpressCF+™ Platform. The issued patents and pending patent applications in the United States and in key markets around the world that we own or license claim many different methods, compositions and processes relating to the discovery, development, manufacture and commercialization of antibody-based and other therapeutics.

As the field of antibody-based therapeutics continues to mature, patent applications are being processed by national patent offices around the world. There is uncertainty about which patents will issue and, if they do, as to when, to whom, and with what claims. In addition, third parties may attempt to invalidate our intellectual property rights. Even if our rights are not directly challenged, disputes could lead to the weakening of our intellectual property rights. Our defense against any attempt by third parties to circumvent or invalidate our intellectual property rights could be costly to us, could require significant time and attention of our management and could have a material and adverse effect on our business, financial condition, results of operations and prospects or our ability to successfully compete.

We may not be able to protect our intellectual property rights throughout the world.

Obtaining a valid and enforceable issued or granted patent covering our technology in the United States and worldwide can be extremely costly, and our or our licensors' or collaborators' intellectual property rights may not exist in some countries outside the United States or may be less extensive in some countries than in the United States. In jurisdictions where we or our licensors or collaborators have not obtained patent protection, competitors may seek to use our or their technology to develop their own products and further, may export otherwise infringing products to territories where we or they have patent protection, but where it is more difficult to enforce a patent as compared to the United States. Competitor products may compete with our future products in jurisdictions where we do not have issued or granted patents or where our or our licensors' or collaborators' issued or granted patent claims or other intellectual property rights are not sufficient to prevent competitor activities in these jurisdictions. The legal systems of certain countries, particularly certain developing countries, make it difficult to enforce patents and such countries may not recognize other types of intellectual property protection, particularly relating to biopharmaceuticals. This could make it difficult for us or our licensors or collaborators to prevent the infringement of our or their patents or marketing of competing

products in violation of our or their proprietary rights generally in certain jurisdictions. Proceeding s to enforce our patent rights in foreign jurisdictions could result in substantial cost and divert our and our licensors' or collaborators' efforts and attention from other aspects of our business, could put our and our licensors' or collaborators' patents at risk of being invalidated or interpreted narrowly and our and our licensors' or collaborators' patent applications at risk of not issuing and could provoke third parties to assert claims against us or our licensors or collaborators. We or our licensors or collaborators may not prevail in any lawsuits that we or our licensors or collaborators initiate, and the damages or other remedies awarded, if any, may not be commercially meaningful.

We generally file a provisional patent application first (a priority filing) at the USPTO. An international application under the Patent Cooperation Treaty, PCT, is usually filed within twelve months after the priority filing. Based on the PCT filing, national and regional patent applications may be filed in the United States, EU, Japan, Australia and Canada and, depending on the individual case, also in any or all of, inter alia, Brazil, China, Hong Kong, India, Israel, Mexico, New Zealand, Russia, South Africa, South Korea and other jurisdictions. We have so far not filed for patent protection in all national and regional jurisdictions where such protection may be available. In addition, we may decide to abandon national and regional patent applications before grant. Finally, the grant proceeding of each national or regional patent is an independent proceeding which may lead to situations in which applications might in some jurisdictions be refused by the relevant registration authorities, while granted by others. It is also quite common that depending on the country, various scopes of patent protection may be granted on the same product candidate or technology.

The laws of some jurisdictions do not protect intellectual property rights to the same extent as the laws in the United States, and many companies have encountered significant difficulties in protecting and defending such rights in such jurisdictions. If we or our licensors or collaborators encounter difficulties in protecting, or are otherwise precluded from effectively protecting, the intellectual property rights important for our business in such jurisdictions, the value of these rights may be diminished and we may face additional competition from others in those jurisdictions. Many countries have compulsory licensing laws under which a patent owner may be compelled to grant licenses to third parties. In addition, many countries limit the enforceability of patents against government agencies or government contractors. In these countries, the patent owner may have limited remedies, which could materially diminish the value of such patent. If we or any of our licensors or collaborators are forced to grant a license to third parties with respect to any patents relevant to our business, our competitive position in the relevant jurisdiction may be impaired and our business, financial condition, results of operations and prospects may be adversely affected.

We, our licensors or collaborators, or any future strategic partners may need to resort to litigation to protect or enforce our patents or other proprietary rights, all of which could be costly, time consuming, delay or prevent the development and commercialization of our product candidates, or put our patents and other proprietary rights at risk.

Competitors may infringe our patents or other intellectual property. If we were to initiate legal proceedings against a third party to enforce a patent covering one of our products or our technology, the defendant could counterclaim that our patent is invalid or unenforceable. In patent litigation in the United States, defendant counterclaims alleging invalidity or unenforceability are commonplace. Grounds for a validity challenge could be an alleged failure to meet any of several statutory requirements, for example, lack of novelty, obviousness or non-enablement. Grounds for an unenforceability assertion could be an allegation that an individual connected with prosecution of the patent withheld relevant information from the USPTO, or made a misleading statement, during prosecution. The outcome following legal assertions of invalidity and unenforceability during patent litigation is unpredictable. With respect to the validity question, for example, we cannot be certain that there is no invalidating prior art, of which we and the patent examiner were unaware during prosecution. If a defendant were to prevail on a legal assertion of invalidity or unenforceability, we would lose at least part, and perhaps all, of the patent protection on one or more of our products or certain aspects of our platform technology. Such a loss of patent protection could have a material and adverse effect on our business, financial condition, results of operations and prospects. Interference or derivation proceedings provoked by third parties or brought by us or declared by the USPTO may be necessary to determine the priority of inventions with respect to our patents or patent applications. An unfavorable outcome could require us to cease using the related technology or to attempt to license rights to it from the prevailing party. Our business could be harmed if the prevailing party does not offer us a license on commercially reasonable terms or at all, or if a non-exclusive license is offered and our competitors gain access to the same technology. Furthermore, because of the substantial amount of discovery required in connection with intellectual property litigation, there is a risk that some of our confidential information could be compromised by disclosure during this type of litigation. There could also be public announcements of the results of hearings, motions, or other interim proceedings or developments. If securities analysts or investors perceive these results to be negative, it could have a material adverse effect on the price of our common stock. Patents and other intellectual property rights also will not protect our technology if competitors design around our protected technology without legally infringing our patents or other intellectual property rights.

Intellectual property rights of third parties could adversely affect our ability to comme rcialize our product candidates, and we, our licensors or collaborators, or any future strategic partners may become subject to third party claims or litigation alleging infringement of patents or other proprietary rights or seeking to invalidate patents or other proprietary rights. We might be required to litigate or obtain licenses from third parties in order to develop or market our product candidates. Such litigation or licenses could be costly or not available on commercially reasonable terms.

We, our licensors or collaborators, or any future strategic partners may be subject to third-party claims for infringement or misappropriation of patent or other proprietary rights. There is a substantial amount of litigation, both within and outside the United States, involving patent and other intellectual property rights in the biotechnology and pharmaceutical industries, including patent infringement lawsuits, interferences, oppositions and *inter partes* review proceedings before the USPTO, and corresponding foreign patent offices. There are many issued and pending patents that might claim aspects of our product candidates and modifications that we may need to apply to our product candidates. There are also many issued patents that claim antibodies, or portions of antibodies, linkers, or cytotoxic warheads that may be relevant for the products we wish to develop. Thus, it is possible that one or more organizations will hold patent rights to which we will need a license. If those organizations refuse to grant us a license to such patent rights on reasonable terms, we may not be able to market products or perform research and development or other activities covered by these patents which could have a material and adverse effect on our business, financial condition, results of operations and prospects. We are obligated under certain of our license and collaboration agreements to indemnify and hold harmless our licensors or collaborators for damages arising from intellectual property infringement by use. For example, we are obligated under the Stanford Agreement to indemnify and hold harmless Stanford for damages arising from intellectual property infringement by us resulting from exercise of the license from Stanford. If we, our licensors or collaborators, or any future strategic partners are found to infringe a third-party patent or other intellectual property rights, we could be required to pay damages, potentially including treble damages, if we are found to have infringed willfully. In addition, we, our licensors or collaborators, or any future strategic partners may choose to seek, or be required to seek, a license from a third party, which may not be available on acceptable terms, if at all. Even if a license can be obtained on acceptable terms, the rights may be non-exclusive, which could give our competitors access to the same technology or intellectual property rights licensed to us. If we fail to obtain a required license, we or our existing or future collaborators may be unable to effectively market product candidates based on our technology, which could limit our ability to generate revenue or achieve profitability and possibly prevent us from generating revenue sufficient to sustain our operations. In addition, we may find it necessary to pursue claims or initiate lawsuits to protect or enforce our patent or other intellectual property rights. The cost to us in defending or initiating any litigation or other proceeding relating to patent or other proprietary rights, even if resolved in our favor, could be substantial, and litigation could divert our management's attention. Some of our competitors may be able to sustain the costs of complex patent litigation more effectively than we can because they have substantially greater resources. Uncertainties resulting from the initiation and continuation of patent litigation or other proceedings could delay our research and development efforts and limit our ability to continue our operations.

Because the antibody-based therapeutics landscape is still evolving, it is difficult to conclusively assess our freedom to operate without infringing on third-party rights. There are numerous companies that have pending patent applications and issued patents broadly covering antibodies generally, covering antibodies directed against the same targets as, or targets similar to, those we are pursuing, or covering linkers and cytotoxic warheads similar to those that we are using in our product candidates. For example, we are aware of an issued patent, expected to expire in 2023, which has claims relating to methods of treating CD74-positive multiple myeloma with an ADC targeting CD74. If valid and not yet expired when, and if, we receive marketing approval for STRO-001, we may need to seek a license to this patent, which may not be available on commercially reasonable terms or at all. Failure to receive a license could delay commercialization of STRO-001. Our competitive position may suffer if patents issued to third parties or other third-party intellectual property rights cover our products or product candidates or elements thereof, or our manufacture or uses relevant to our development plans. In such cases, we may not be in a position to develop or commercialize products or product candidates until such patents expire or unless we successfully pursue litigation to nullify or invalidate the third-party intellectual property right concerned, or enter into a license agreement with the intellectual property right holder, if available on commercially reasonable terms. There may be issued patents of which we are not aware, held by third parties that, if found to be valid and enforceable, could be alleged to be infringed by our XpressCF+™ Platform and related technologies and product candidates. There also may be pending patent applications of which we are not aware that may result in issued patents, which could be alleged to be infringed by our XpressCF+™ Platform and related technologies and product candidates. If such an infringement claim should be brought and be successful, we may be required to pay substantial damages, including potentially treble damages and attorneys' fees for willful infringement, and we may be forced to abandon our product candidates or seek a license from any patent holders. No assurances can be given that a license will be available on commercially reasonable terms, if at all.

It is also possible that we have failed to identify relevant third-party patents or applications. For example, U.S. applications filed before November 29, 2000 and certain U.S. applications filed after that date that will not be filed outside the United States remain confidential until patents issue. Patent applications in the United States and elsewhere are published approximately 18 months after the earliest filing for which priority is claimed, with such earliest filing date being commonly referred to as the priority date. Therefore, patent applications covering our products or platform technology could have been filed by others without our knowledge. Additionally, pending patent applications that have been published can, subject to certain limitations, be later amended in a manner that could cover our platform technology, our products or the use of our products. Third-party intellectual property right holders may also actively bring infringement claims against us. We cannot guarantee that we will be able to successfully settle or otherwise resolve such infringement claims. If we are unable to successfully settle future claims on terms acceptable to us, we may be required to engage in or continue costly, unpredictable and time-consuming litigation and may be prevented from or experience substantial delays in marketing our products. Parties making claims against us may be able to sustain the costs of complex patent litigation more effectively than we can because they have substantially greater resources. Furthermore, because of the substantial amount of discovery required in connection with intellectual property litigation or administrative proceedings, there is a risk that some of our confidential information could be compromised by disclosure. In addition, any uncertainties resulting from the initiation and continuation of any litigation could have material adverse effect on our ability to raise additional funds or otherwise have a material adverse effect on our business, results of operations, financial condition and prospects. If we fail in any such dispute, in addition to being forced to pay damages, we may be temporarily or permanently prohibited from commercializing any of our product candidates that are held to be infringing. We might, if possible, also be forced to redesign product candidates so that we no longer infringe the third-party intellectual property rights. Any of these events, even if we were ultimately to prevail, could require us to divert substantial financial and management resources that we would otherwise be able to devote to our business and could have a material and adverse effect on our business, financial condition, results of operations and prospects.

Intellectual property litigation could cause us to spend substantial resources and distract our personnel from their normal responsibilities.

Litigation or other legal proceedings relating to intellectual property claims, with or without merit, is unpredictable and generally expensive and time consuming and is likely to divert significant resources from our core business, including distracting our technical and management personnel from their normal responsibilities. Furthermore, because of the substantial amount of discovery required in connection with intellectual property litigation, there is a risk that some of our confidential information could be compromised by disclosure during this type of litigation. In addition, there could 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. Moreover, such litigation or proceedings could substantially increase our operating losses and reduce the resources available for development activities or any future sales, marketing or distribution activities.

We may not have sufficient financial or other resources to adequately conduct such litigation or proceedings. Some of our competitors may be able to sustain the costs of such litigation or proceedings more effectively than we can because of their greater financial resources and more mature and developed intellectual property portfolios. Accordingly, despite our efforts, we may not be able to prevent third parties from infringing upon or misappropriating or from successfully challenging our intellectual property rights. Uncertainties resulting from the initiation and continuation of patent litigation or other proceedings could have a material adverse effect on our ability to compete in the marketplace.

If we fail to comply with our obligations under any license, collaboration or other agreements, we may be required to pay damages and could lose intellectual property rights that are necessary for developing and protecting our product candidates or we could lose certain rights to grant sublicenses.

Our current licenses impose, and any future licenses we enter into are likely to impose, various development, commercialization, funding, milestone, royalty, diligence, sublicensing, insurance, patent prosecution and enforcement and/or other obligations on us. If we breach any of these obligations, or use the intellectual property licensed to us in an unauthorized manner, we may be required to pay damages and the licensor may have the right to terminate the license, which could result in us being unable to develop, manufacture and sell any future products that are covered by the licensed technology or enable a competitor to gain access to the licensed technology. Moreover, our licensors may own or control intellectual property that has not been licensed to us and, as a result, we may be subject to claims, regardless of their merit, that we are infringing or otherwise violating the licensor's rights. In addition, while we cannot determine currently the amount of the royalty obligations we would be required to pay on sales of future products, if any, the amounts may be significant. The amount of our future royalty obligations will depend on the technology and intellectual property we use in products that we successfully develop and commercialize, if any. Therefore, even if we successfully develop and commercialize products, we may be unable to achieve or maintain profitability.

Moreover, disputes may arise regarding intellectual property subject to a licensing agreeme nt, including:

- the scope of rights granted under the license agreement and other interpretation-related issues;
- the extent to which our product candidates, technology and processes infringe on intellectual property of the licensor that is not subject to the licensing agreement;
- the sublicensing of patent and other rights under our collaborative development relationships;
- our diligence obligations under the license agreement and what activities satisfy those diligence obligations;
- the inventorship and ownership of inventions and know-how resulting from the joint creation or use of intellectual property by our licensors and us and our partners; and
- the priority of invention of patented technology.

In addition, the agreements under which we currently license intellectual property or technology from third parties are complex, and certain provisions in such agreements may be susceptible to multiple interpretations. The resolution of any contract interpretation disagreement that may arise could narrow what we believe to be the scope of our rights to the relevant intellectual property or technology, or increase what we believe to be our financial or other obligations under the relevant agreement, either of which could have a material adverse effect on our business, financial condition, results of operations, and prospects. Moreover, if disputes over intellectual property that we have licensed prevent or impair our ability to maintain our current licensing arrangements on commercially acceptable terms, we may be unable to successfully develop and commercialize the affected product candidates, which could have a material adverse effect on our business, financial conditions, results of operations, and prospects.

We may be subject to claims that we or our employees or consultants have wrongfully used or disclosed alleged trade secrets of our employees' or consultants' former employers or their clients. These claims may be costly to defend and if we do not successfully do so, we may be required to pay monetary damages and may lose valuable intellectual property rights or personnel.

Many of our employees were previously employed at universities or biotechnology or biopharmaceutical companies, including our competitors or potential competitors. Although no claims against us are currently pending, we may be subject to claims that these employees or we have inadvertently or otherwise used or disclosed trade secrets or other proprietary information of their former employers. Litigation may be necessary to defend against these claims. If we fail in defending such claims, in addition to paying monetary damages, we may lose valuable intellectual property rights or personnel. A loss of key research personnel or their work product could hamper our ability to commercialize, or prevent us from commercializing, our product candidates, which could severely harm our business. Even if we are successful in defending against these claims, litigation could result in substantial costs and be a distraction to management.

Patent terms may be inadequate to protect our competitive position on our product candidates for an adequate amount of time.

Patents have a limited lifespan. In the United States, if all maintenance fees are timely paid, the natural expiration of a patent is generally 20 years from its earliest U.S. non-provisional filing date. Various extensions may be available, but the life of a patent, and the protection it affords, is limited. Even if patents covering our product candidates are obtained, once the patent life has expired, we may be open to competition from competitive products, including generics or biosimilars. Given the amount of time required for the development, testing and regulatory review of new product candidates, patents protecting such candidates might expire before or shortly after such candidates are commercialized. As a result, our owned and licensed patent portfolio may not provide us with sufficient rights to exclude others from commercializing products similar or identical to ours.

Obtaining and maintaining our patent protection depends on compliance with various procedural, document submission, fee payment and other requirements imposed by governmental patent agencies, and our patent protection could be reduced or eliminated for non-compliance with these requirements.

Periodic maintenance fees, renewal fees, annuity fees and various other governmental fees on patents and/or applications will be due to be paid to the USPTO and various governmental patent agencies outside of the United States in several stages over the lifetime of the patents and/or applications. We have systems in place to remind us to pay these fees, and we employ an outside firm and/or rely on our outside counsel to pay these fees due to non-U.S. patent agencies. The USPTO and various non-U.S. governmental patent agencies require compliance with a number of procedural, documentary, fee payment and other similar provisions during the patent application process. We employ reputable law firms and other professionals to help us comply, and in many cases, an inadvertent lapse can be cured by payment of a late fee or by other means in accordance with the applicable rules. However, there are situations in which non-compliance can result in abandonment or lapse of the patent or patent application, resulting in partial or complete loss of patent rights in the relevant jurisdiction. In such an event, our competitors might be able to enter the market and this circumstance would have a material adverse effect on our business.

Changes in U.S. patent and ex-U.S. patent laws could diminish the value of patents in general, thereby impairing our ability to protect our products.

Changes in either the patent laws or interpretation of the patent laws in the United States or in other ex-U.S. jurisdictions could increase the uncertainties and costs surrounding the prosecution of patent applications and the enforcement or defense of issued patents. In the United States, numerous recent changes to the patent laws and proposed changes to the rules of the USPTO that may have a significant impact on our ability to protect our technology and enforce our intellectual property rights. For example, the America Invents Act, enacted within the last several years involves significant changes in patent legislation. The U.S. Supreme Court has ruled on several patent cases in recent years, some of which cases either narrow the scope of patent protection available in certain circumstances or weaken the rights of patent owners in certain situations. For example, the decision by the U.S. Supreme Court in Association for Molecular Pathology v. Myriad Genetics, Inc. precludes a claim to a nucleic acid having a stated nucleotide sequence that is identical to a sequence found in nature and unmodified. We currently are not aware of an immediate impact of this decision on our patents or patent applications because we are developing product candidates that contain modifications that we believe are not found in nature. However, this decision has yet to be clearly interpreted by courts and by the USPTO. We cannot assure you that the interpretations of this decision or subsequent rulings will not adversely impact our patents or patent applications. In addition to increasing uncertainty with regard to our ability to obtain patents in the future, this combination of events has created uncertainty with respect to the value of patents, once obtained. Depending on decisions by the U.S. Congress, the federal courts and the USPTO, and similar legislative and regulatory bodies in other countries in which we may pursue patent protection, the laws and regulations governing patents could change in unpredictable ways that would weaken our ability to obtain new patents or to enforce our existing patents and patents that we might obtain in the future.

If our trademarks and trade names are not adequately protected, then we may not be able to build name recognition in our markets of interest and our business may be adversely affected.

Our trademarks or trade names may be challenged, infringed, circumvented or declared generic or determined to be infringing on other marks. We may not be able to protect our rights to these trademarks and trade names or may be forced to stop using these names, which we need for name recognition by potential partners or customers in our markets of interest. If we are unable to establish name recognition based on our trademarks and trade names, we may not be able to compete effectively which could have a material and adverse effect on our business, financial condition, results of operations and prospects.

Risks Related to Government Regulation

Clinical development involves a lengthy and expensive process with an uncertain outcome, and results of earlier studies and trials may not be predictive of future trial results. If we are unable to develop, obtain regulatory approval for and commercialize our product candidates, or experience significant delays in doing so, our business will be materially harmed.

All of our product candidates are in preclinical or early clinical development and their risk of failure is high. It is impossible to predict when or if any of our product candidates will receive regulatory approval. Before obtaining marketing approval from regulatory authorities for the sale of any product candidate, we must complete preclinical studies and then conduct extensive clinical trials to demonstrate the safety and efficacy of our product candidates in humans. Clinical testing is expensive and can take many years to complete, and its outcome is inherently uncertain. Failure can occur at any time during the development process. The results of preclinical studies and early clinical trials of our product candidates may not be predictive of the results of later-stage clinical trials. Product candidates in later stages of clinical trials may fail to show the desired safety and efficacy traits, despite having progressed through preclinical studies and initial clinical trials. A number of companies in the biopharmaceutical industry have suffered significant setbacks in advanced clinical trials due to lack of efficacy or safety profiles, notwithstanding promising results in earlier trials.

We commenced a Phase 1 clinical trial of STRO-001, an ADC directed against CD74, for certain cancers in April 2018. In November 2018, the FDA concluded their 30-day review of our IND application for STRO-002, an ADC directed against folate receptor-alpha, for certain cancers. We expect to commence a Phase 1 clinical trial focused on ovarian and endometrial cancers in early 2019. Commencing our future clinical trials is subject to finalizing the trial design and submitting an IND or similar submission with the FDA or similar foreign regulatory authority. Even after we submit our IND or comparable submissions in other jurisdictions, the FDA or other regulatory authorities could disagree that we have satisfied their requirements to commence our clinical trials or disagree with our study design, which may require us to complete additional preclinical studies or amend our protocols or impose stricter conditions on the commencement of clinical trials.

We or our collaborators may experience delays in completing our preclinical studies and initiating or completing clinical trials of our product candidates. We do not know whether planned preclinical studies and clinical trials will be completed on schedule or at all, or whether planned clinical trials will begin on time, need to be redesigned, have patients enrolled on time or be completed on schedule, if at all. We or our collaborators may experience numerous unforeseen events during, or as a result of, clinical trials that could delay or prevent our ability to receive marketing approval to commercialize our product candidates. Our development programs may be delayed for a variety of reasons, including delays related to:

- the FDA or other regulatory authorities requiring us or our collaborators to submit additional data or imposing other requirements before permitting us to initiate a clinical trial;
- obtaining regulatory approval to commence a clinical trial;
- the FDA or other regulatory authorities placing a clinical trial on clinical hold;
- reaching agreement on acceptable terms with prospective CROs and clinical trial sites, the terms of which can be subject to extensive negotiation and may vary significantly among different CROs and clinical trial sites;
- clinical trials of our product candidates producing negative or inconclusive results, and we or our collaborators deciding, or regulators requiring us, to conduct additional clinical trials, including testing in more subjects, or abandoning product development programs;
- third-party contractors used by us or our collaborators failing to comply with regulatory requirements or meet their contractual obligations in a timely manner, or at all;
- obtaining institutional review board, or IRB, approval at each clinical trial site;
- recruiting suitable patients to participate in a clinical trial;
- developing and validating any companion diagnostic that would be used in a clinical trial;
- cost of clinical trials being greater than anticipated;
- the supply or quality of our product candidates or other materials necessary to conduct clinical trials of our product candidates being insufficient or inadequate;
- having patients complete a clinical trial or return for post-treatment follow-up;
- clinical trial sites deviating from trial protocol or dropping out of a trial;
- adding new clinical trial sites; or
- manufacturing sufficient quantities of our product candidates for use in clinical trials.

Patient enrollment, a significant factor in the timing of clinical trials, is affected by many factors including the size and nature of the patient population, the proximity of patients to clinical sites, the eligibility criteria for the trial, the design of the clinical trial, competing clinical trials and clinicians' and patients' perceptions as to the potential advantages of the product candidate being studied in relation to other available therapies, including any new drugs or therapeutic biologics that may be approved for the indications being investigated by us. Furthermore, we expect to rely on our collaborators, CROs and clinical trial sites to ensure the proper and timely conduct of our clinical trials and, while we expect to enter into agreements governing their committed activities, we have limited influence over their actual performance.

We could encounter delays if prescribing physicians encounter unresolved ethical issues associated with enrolling patients in clinical trials of our product candidates in lieu of prescribing existing treatments that have established safety and efficacy profiles.

Further, a clinical trial may be suspended or terminated by us, our collaborators, the IRBs of the institutions in which such trials are being conducted, the Data Safety Monitoring Board for such trial or placed on clinical hold by the FDA or other regulatory authorities due to a number of factors, including failure to conduct the clinical trial in accordance with regulatory requirements or our clinical protocols, inspection of the clinical trial operations or trial site by the FDA or other regulatory authorities resulting in the imposition of a clinical hold, unforeseen safety issues or adverse side effects, failure to demonstrate a benefit from using a drug or therapeutic biologic, changes in governmental regulations or administrative actions or lack of adequate funding to continue the clinical trial. If we experience delays in the completion of, or termination of, any clinical trial of our product candidates, the commercial prospects of our product candidates will be harmed, and our ability to generate product revenues from any of these product candidates will be delayed. In addition, any delays in completing our clinical trials will increase our costs, slow down our product development and approval process and jeopardize our ability to commence product sales and generate revenues. Any of these occurrences could materially and adversely affect our business, financial condition, results of operations and prospects. In addition, many of the factors that cause, or lead to, a delay in the commencement or completion of clinical trials may also ultimately lead to the denial of regulatory approval of our product candidates.

We and/or our collaborators may be unable to obtain, or may be delayed in obtaining, U.S. or foreign regulatory approval and, as a result, unable to commercialize our product candidates.

Our product candidates are subject to extensive governmental regulations relating to, among other things, research, testing, development, manufacturing, safety, efficacy, approval, recordkeeping, reporting, labeling, storage, packaging, advertising and promotion, pricing, marketing and distribution of drugs and therapeutic biologics. Rigorous preclinical testing and clinical trials and an extensive regulatory approval process are required to be completed successfully in the United States and in many foreign jurisdictions before a new drug or therapeutic biologic can be marketed. Satisfaction of these and other regulatory requirements is costly, time consuming, uncertain and subject to unanticipated delays. It is possible that none of the product candidates we may develop, either alone or with our collaborators, will obtain the regulatory approvals necessary for us or our existing or future collaborators to begin selling them.

Although our employees have experience in conducting and managing clinical trials from prior employment at other companies, we, as a company, have no prior experience in conducting and managing the clinical trials necessary to obtain regulatory approvals, including approval by the FDA. The time required to obtain FDA and other approvals is unpredictable but typically takes many years following the commencement of clinical trials, depending upon the type, complexity and novelty of the product candidate. The standards that the FDA and its foreign counterparts use when regulating us require judgment and can change, which makes it difficult to predict with certainty their application. Any analysis we perform of data from preclinical and clinical activities is subject to confirmation and interpretation by regulatory authorities, which could delay, limit or prevent regulatory approval. We or our collaborators may also encounter unexpected delays or increased costs due to new government regulations, for example, from future legislation or administrative action, or from changes in FDA policy during the period of product development, clinical trials and FDA regulatory review. It is impossible to predict whether legislative changes will be enacted, or whether FDA or foreign regulations, guidance or interpretations will be changed, or the impact of such changes, if any. Given that the product candidates we are developing, either alone or with our collaborators, represent a new approach to the manufacturing and type of therapeutic biologics, the FDA and its foreign counterparts have not yet established any definitive policies, practices or guidelines in relation to these product candidates. Moreover, the FDA may respond to any BLA, that we may submit by defining requirements that we do not anticipate. Such responses could delay clinical development of our product candidates. In addition, because there may be approved treatments for some of the diseases for which we may seek approval, in order to receive regulatory approval, we may need to demonstrate through clinical trials that the product candidates we develop to treat these diseases, if any, are not only safe and effective, but safer or more effective than existing products. Furthermore, in recent years, there has been increased public and political pressure on the FDA with respect to the approval process for new drugs and therapeutic biologics, and FDA standards, especially regarding product safety, appear to have become more stringent.

Any delay or failure in obtaining required approvals could have a material and adverse effect on our ability to generate revenues from the particular product candidate for which we are seeking approval. Furthermore, any regulatory approval to market a product may be subject to limitations on the approved uses for which we may market the product or on the labeling or other restrictions. In addition, the FDA has the authority to require a risk evaluation and mitigation strategies, or REMS, plan as part of a BLA or after approval, which may impose further requirements or restrictions on the distribution or use of an approved biologic, such as limiting prescribing to certain physicians or medical centers that have undergone specialized training, limiting treatment to patients who meet certain safe-use criteria and requiring treated patients to enroll in a registry. These limitations and restrictions may limit the size of the market for the product and affect reimbursement by third-party payors.

We are also subject to numerous foreign regulatory requirements governing, among other things, the conduct of clinical trials, manufacturing and marketing authorization, pricing and third-party reimbursement. The foreign regulatory approval process varies among countries and may include all of the risks associated with FDA approval process described above, as well as risks attributable to the satisfaction of local regulations in foreign jurisdictions. Moreover, the time required to obtain approval may differ from that required to obtain FDA approval. FDA approval does not ensure approval by regulatory authorities outside the United States and vice versa. Any delay or failure to obtain U.S. or foreign regulatory approval for a product candidate could have a material and adverse effect on our business, financial condition, results of operations and prospects.

Delays in obtaining regulatory approval of our manufacturing process may delay or disrupt our commercialization efforts. To date, no product using a cell-free manufacturing process in the United States has received approval from the FDA.

Before we can begin to commercially manufacture our product candidates in third-party or our own facilities, we must obtain regulatory approval from the FDA for a BLA that describes in detail the chemistry, manufacturing, and controls for the product. A manufacturing authorization must also be obtained from the appropriate EU regulatory authorities. The timeframe required to obtain such approval or authorization is uncertain. In addition, we must pass a pre-approval inspection of our manufacturing facility by the FDA before any of our product candidates can obtain marketing approval, if ever. In order to obtain approval, we will need to ensure that all of our processes, methods and equipment are compliant

with cGMP, and perform extensive audits of vendors, contract laboratories and suppliers. If any of our vendors, contract laboratories or suppliers is found to be out of compliance with cGMP, we may experience delays or disruptions in manufacturing while we work with these third parties to remedy the violation or while we work to identify suitable replacement vendors. The cGMP requirements govern quality control of the manufacturing process and documentation policies and procedures. In complying with cGMP, we will be obligated to expend time, money and effort in production, record keeping and quality control to assure that the product meets applicable specifications and other requirements. If we fail to comply with these requirements, we would be subject to possible regulatory action and may not be permitted to sell any products that we may develop.

Even if we receive regulatory approval for any of our product candidates, we will be subject to ongoing regulatory obligations and continued regulatory review, which may result in significant additional expense. Additionally, our product candidates, if approved, could be subject to labeling and other restrictions and market withdrawal. We may also be subject to penalties if we fail to comply with regulatory requirements or experience unanticipated problems with our products.

Any regulatory approvals that we or our existing or future collaborators obtain for our product candidates may also be subject to limitations on the approved indicated uses for which a product may be marketed or to the conditions of approval, or contain requirements for potentially costly post-marketing testing, including Phase 4 clinical trials, and surveillance to monitor the safety and efficacy of the product candidate.

In addition, if the FDA or a comparable foreign regulatory authority approves any of our product candidates, the manufacturing processes, labeling, packaging, distribution, adverse event reporting, storage, import, export, advertising, promotion and recordkeeping for the product will be subject to extensive and ongoing regulatory requirements. The FDA has significant post-market authority, including the authority to require labeling changes based on new safety information and to require post-market studies or clinical trials to evaluate safety risks related to the use of a product or to require withdrawal of the product from the market. The FDA also has the authority to require a REMS plan after approval, which may impose further requirements or restrictions on the distribution or use of an approved drug or therapeutic biologic. The manufacturing facilities we use to make a future product, if any, will also be subject to periodic review and inspection by the FDA and other regulatory agencies, including for continued compliance with cGMP requirements. The discovery of any new or previously unknown problems with our third-party manufacturers, manufacturing processes or facilities may result in restrictions on the product, manufacturer or facility, including withdrawal of the product from the market. If we rely on third-party manufacturers, we will not have control over compliance with applicable rules and regulations by such manufacturers. Any product promotion and advertising will also be subject to regulatory requirements and continuing regulatory review. If we or our existing or future collaborators, manufacturers or service providers fail to comply with applicable continuing regulatory requirements in the United States or foreign jurisdictions in which we seek to market our products, we or they may be subject to, among other things, fines, warning letters, holds on clinical trials, delay of approval or refusal by the FDA or similar foreign regulatory bodies to approve pending applications or supplements to approved applications, suspension or withdrawal of regulatory approval, product recalls and seizures, administrative detention of products, refusal to permit the import or export of products, operating restrictions, injunction, civil penalties and criminal prosecution.

Subsequent discovery of previously unknown problems with a product, including adverse events of unanticipated severity or frequency, or with our third-party manufacturers or manufacturing processes, or failure to comply with regulatory requirements, may result in, among other things:

- restrictions on the marketing or manufacturing of the product, withdrawal of the product from the market or voluntary or mandatory product recalls;
- fines, warning or untitled letters or holds on clinical trials;
- refusal by the FDA to approve pending applications or supplements to approved applications filed by us or our strategic partners;
- suspension or revocation of product license approvals;
- product seizure or detention or refusal to permit the import or export of products; and
- injunctions or the imposition of civil or criminal penalties.

The FDA policies may change and additional government regulations may be enacted that could prevent, limit or delay regulatory approval of our product candidates. For example, in December 2016, the 21st Century Cures Act, or Cures Act, was signed into law. The Cures Act, among other things, is intended to modernize the regulation of drugs and biologics and to spur innovation, but its ultimate implementation is unclear. If we are slow or unable to adapt to changes in existing requirements or the adoption of new requirements or policies, or if we are not able to maintain regulatory compliance, we may lose any marketing approval that we may have obtained and we may not achieve or sustain profitability, which would adversely affect our business.

We also cannot predict the likelihood, nature or extent of government regulation that may arise from future legislation or administrative or executive action, either in the United States or abroad. For example, certain policies of the current U.S. presidential administration may impact our business and industry. Namely, the current U.S. presidential administration has taken several executive actions, including the issuance of a number of executive orders, that could impose significant burdens on, or otherwise materially delay, the FDA's ability to engage in routine regulatory and oversight activities such as implementing statutes through rulemaking, issuance of guidance, and review and approval of marketing applications. Notably, on January 23, 2017, the current U.S. presidential administration ordered a hiring freeze for all executive departments and agencies, including the FDA, which prohibited the FDA from filling employee vacancies or creating new positions. Under the terms of the executive order, the freeze was to remain in effect until implementation of a plan recommended by the Director for the Office of Management and Budget, or OMB, in consultation with the Director of the Office of Personnel Management, to reduce the size of the federal workforce through attrition. While the general hiring freeze was lifted on April 12, 2017, the FDA remained under a hiring freeze until May 25, 2017. However, the fiscal 2018 budget proposal for the FDA still calls for overall reductions in the FDA workforce, mostly through attrition. We believe an under-staffed FDA could result in delays in the FDA's responsiveness or in its ability to review submissions or applications, issue regulations or guidance, or implement or enforce regulatory requirements in a timely fashion or at all. Moreover, on January 30, 2017, the current U.S. presidential administration issued an executive order, applicable to all executive agencies, including the FDA, which requires that for each notice of proposed rulemaking or final regulation to be issued in fiscal year 2017, the agency shall identify at least two existing regulations to be repealed, unless prohibited by law. These requirements are referred to as the "two-for-one" provisions. This executive order includes a budget neutrality provision that requires the total incremental cost of all new regulations in the 2017 fiscal year, including repealed regulations, to be no greater than zero, except in limited circumstances. For fiscal years 2018 and beyond, the executive order requires agencies to identify regulations to offset any incremental cost of a new regulation and approximate the total costs or savings associated with each new regulation or repealed regulation. In interim guidance issued by the Office of Information and Regulatory Affairs within OMB on February 2, 2017, the administration indicates that the "two-for-one" provisions may apply not only to agency regulations, but also to significant agency guidance documents. It is difficult to predict how these requirements will be implemented, and the extent to which they will impact the FDA's ability to exercise its regulatory authority. If these executive actions impose constraints on the FDA's ability to engage in oversight and implementation activities in the normal course, our business may be negatively impacted.

We may face difficulties from healthcare legislative reform measures.

Existing regulatory policies may change and additional government regulations may be enacted that could prevent, limit or delay regulatory approval of our product candidates. We cannot predict the likelihood, nature or extent of government regulation that may arise from future legislation or administrative action, either in the United States or abroad. If we are slow or unable to adapt to changes in existing requirements or the adoption of new requirements or policies, or if we are not able to maintain regulatory compliance, we may lose any marketing approval that we may have obtained and we may not achieve or sustain profitability.

In the United States, there have been and continue to be a number of legislative initiatives to contain healthcare costs. For example, in March 2010, the Patient Protection and Affordable Care Act, as amended by the Healthcare and Education Reconciliation Act, or together, the ACA, was enacted, which substantially changed the way healthcare is financed by both governmental and private insurers, and significantly impacts the U.S. pharmaceutical industry. The ACA, among other things, (i) subjected therapeutic biologics to potential competition by lower-cost biosimilars by creating a licensure framework for follow on biologic products, (ii) proscribed a new methodology by which rebates owed by manufacturers under the Medicaid Drug Rebate Program are calculated for drugs and therapeutic biologics that are inhaled, infused, instilled, implanted or injected, (iii) increased the minimum Medicaid rebates owed by manufacturers under the Medicaid Drug Rebate Program and extended the rebate program to individuals enrolled in Medicaid managed care organizations, (iv) established annual fees and taxes on manufacturers of certain branded prescription drugs and therapeutic biologics, (v) established a new Medicare Part D coverage gap discount program, in which manufacturers must agree to offer 50% point-of-sale discounts off negotiated prices of applicable brand drugs and therapeutic biologics to eligible beneficiaries during their coverage gap period, as a condition for the manufacturer's outpatient drugs and

therapeutic biologics to be covered under Medicare Part D, (vi) expanded eligibility criteria for Medicaid programs by, among other things, a llowing states to offer Medicaid coverage to additional individuals and by adding new mandatory eligibility categories for individuals with income at or below 133% of the federal poverty level, thereby potentially increasing manufacturers' Medicaid rebate liability, (vii) expanded the entities eligible for discounts under the Public Health program (viii) created a new Patient-Centered Outcomes Research Institute to oversee, identify priorities in, and conduct comparative clinical effectiveness research, along with funding for such research and (ix) established a Center for Medicare Innovation at the Centers for Medicare & Medicaid Services, or CMS, to test innovative payment and service delivery models to lower Medicare and Medicaid spending, potentially including prescription drug spending.

The current U.S. presidential administration and U.S. Congress have sought, and we expect they will continue to, seek to modify, repeal, or otherwise invalidate all, or certain provisions of, the ACA. Since January 2017, the current U.S. presidential administration has issued two executive orders and other directives designed to delay the implementation of certain provisions of the ACA or otherwise circumvent some of the requirements for health insurance mandated by the ACA. For example, on October 12, 2017, the current U.S. presidential administration issued an executive order that expands the use of association health plans and allows anyone to purchase short-term health plans that provide temporary, limited insurance. This executive order also calls for the halt of federal payments to health insurers for cost-sharing reductions previously available to lower-income Americans to afford coverage. There is still uncertainty with respect to the impact this executive order could have on coverage and reimbursement for healthcare items and services covered by plans that were authorized by the ACA. Concurrently, Congress has considered legislation that would repeal or repeal and replace all or part of the ACA. While Congress has not passed comprehensive repeal legislation, two bills affecting the implementation of certain taxes under the ACA have been signed into law. The Tax Reform Act, among other things, includes a provision repealing, effective January 1, 2019, the tax-based shared responsibility payment imposed by the ACA on certain individuals who fail to maintain qualifying health coverage for all or part of a year that is commonly referred to as the "individual mandate". Additionally, on January 22, 2018, the current U.S. presidential administration signed a continuing resolution on appropriations for fiscal year 2018 that delayed the implementation of certain ACA-mandated fees, including the so-called "Cadillac" tax on certain high cost employer-sponsored insurance plans, the annual fee imposed on certain health insurance providers based on market share, and the medical device excise tax on non-exempt medical devices. Further, the Bipartisan Budget Act of 2018, or the BBA, among other things, amends the ACA, effective January 1, 2019, to increase from 50 percent to 70 percent the point-of-sale discount that is owed by pharmaceutical manufacturers who participate in Medicare Part D and to close the coverage gap in most Medicare drug plans, commonly referred to as the "donut hole". More recently, in July 2018, CMS published a final rule permitting further collections and payments to and from certain ACA qualified health plans and health insurance issuers under the ACA risk adjustment program in response to the outcome of federal district court litigation regarding the method CMS uses to determine this risk adjustment. There is still uncertainty with respect to the impact the current U.S. presidential administration and Congress may have, if any, and any changes will likely take time to unfold, and could have an impact on coverage and reimbursement for healthcare items and services covered by plans that were authorized by the ACA. However, we cannot predict the ultimate content, timing or effect of any healthcare reform legislation or the impact of potential legislation on us.

In addition, other legislative changes have been proposed and adopted in the United States since the ACA was enacted to reduce healthcare expenditures. U.S. federal government agencies also currently face potentially significant spending reductions, which may further impact healthcare expenditures. On August 2, 2011, the Budget Control Act of 2011 among other things, created measures for spending reductions by Congress. A joint select committee on deficit reduction, tasked with recommending a targeted deficit reduction of at least $1.2 trillion for the years 2013 through 2021, was unable to reach required goals, thereby triggering the legislation's automatic reduction to several government programs. This includes aggregate reductions of Medicare payments to providers of 2% per fiscal year. These reductions went into effect on April 1, 2013 and, due to subsequent legislative amendments to the statute, including the BBA, will remain in effect through 2027 unless additional Congressional action is taken. Moreover, on January 2, 2013, the American Taxpayer Relief Act of 2012 was signed into law, which, among other things, further reduced Medicare payments to several types of providers, including hospitals, imaging centers and cancer treatment centers, and increased the statute of limitations period for the government to recover overpayments to providers from three to five years. If federal spending is further reduced, anticipated budgetary shortfalls may also impact the ability of relevant agencies, such as the FDA or the National Institutes of Health to continue to function at current levels. Amounts allocated to federal grants and contracts may be reduced or eliminated. These reductions may also impact the ability of relevant agencies to timely review and approve research and development, manufacturing, and marketing activities, which may delay our ability to develop, market and sell any products we may develop.

Moreover, payment methodologies, including payment for companion diagnostics, may be subject to changes in healthcare legislation and regulatory initiatives. For example, the Medicare Prescription Drug, Improvement, and Modernization Act of 2003, or MMA, changed the way Medicare covers and pays for pharmaceutical products. The legislation expanded Medicare coverage for drug purchases by the elderly and introduced a new reimbursement methodology based on average sales prices for physician-administered drugs. In addition, this legislation provided authority for limiting the number of drugs that will be covered in any therapeutic class. While the MMA only applies to drug benefits for Medicare beneficiaries, private payors often follow Medicare coverage policy and payment limitations in setting their own reimbursement rates. Therefore, any reduction in reimbursement that results from the MMA may result in a similar reduction in payments from private payors. In addition, CMS has begun bundling the Medicare payments for certain laboratory tests ordered while a patient received services in a hospital outpatient setting and, beginning in 2018, CMS will pay for clinical laboratory services based on a weighted average of reported prices that private payors, Medicare Advantage plans, and Medicaid Managed Care plans pay for laboratory services. Further, on March 16, 2018, CMS finalized its National Coverage Determination, or NCD, for certain diagnostic laboratory tests using next generation sequencing that are approved by the FDA as a companion *in vitro* diagnostic and used in a cancer with an FDA-approved companion diagnostic indication. Under the NCD, diagnostic tests that gain FDA approval or clearance as an *in vitro* companion diagnostic will automatically receive full coverage and be available for patients with recurrent, metastatic relapsed, refractory or stages III and IV cancer. Additionally, the NCD extended coverage to repeat testing when the patient has a new primary diagnosis of cancer.

Recently there has been heightened governmental scrutiny over the manner in which manufacturers set prices for their marketed products, which has resulted in several Congressional inquiries and proposed and enacted federal and state legislation designed to, among other things, bring more transparency to product pricing, review the relationship between pricing and manufacturer patient programs, and reform government program reimbursement methodologies for drug products. At the federal level, the current U.S. presidential administration's budget proposal for fiscal year 2019 contains further drug price control measures that could be enacted during the 2019 budget process or in other future legislation, including, for example, measures to permit Medicare Part D plans to negotiate the price of certain drugs under Medicare Part B, to allow some states to negotiate drug prices under Medicaid, and to eliminate cost sharing for generic drugs for low-income patients. Additionally, on May 11, 2018, the current U.S. presidential administration laid out the administration's "Blueprint" to reduce the cost of prescription medications while preserving innovation and cures. While the Department of Health and Human Services, or HHS, is soliciting feedback on some of these measures, other actions may be immediately implemented by HHS under existing authority. Although a number of these, and other potential, proposals will require authorization through additional legislation to become effective, Congress and the current U.S. presidential administration have each indicated that it will continue to seek new legislative and/or administrative measures to control drug costs. At the state level, legislatures are increasingly passing legislation and implementing regulations designed to control pharmaceutical and biological product pricing, including price or patient reimbursement constraints, discounts, restrictions on certain product access and marketing cost disclosure and transparency measures, and, in some cases, designed to encourage importation from other countries and bulk purchasing. We expect that additional state and federal healthcare reform measures will be adopted in the future, any of which could limit the amounts that federal and state governments will pay for healthcare products and services, which could result in reduced demand for our product candidates or companion diagnostics or additional pricing pressures.

Additionally, on May 30, 2018, the Trickett Wendler, Frank Mongiello, Jordan McLinn, and Matthew Bellina Right to Try Act of 2017 was signed into law. The law, among other things, provides a federal framework for certain patients to access certain investigational new drug products that have completed a Phase I clinical trial and that are undergoing investigation for FDA approval. Under certain circumstances, eligible patients can seek treatment without enrolling in clinical trials and without obtaining FDA authorization under an FDA expanded access program.

We expect that the ACA, as well as other healthcare reform measures that may be adopted in the future, may result in more rigorous coverage criteria and in additional downward pressure on the price that we receive for any approved product. The implementation of cost containment measures or other healthcare reforms may prevent us from being able to generate revenue, attain profitability, or commercialize our products.

Our operations and relationships with healthcare providers, healthcare organizations, customers and third-party payors will be subject to applicable anti-bribery, anti-kickback, fraud and abuse, transparency and other healthcare laws and regulations, which could expose us to, among other things, enforcement actions, criminal sanctions, civil penalties, contractual damages, reputational harm, administrative burdens and diminished profits and future earnings.

Our current and future arrangements with healthcare providers, healthcare organizations, third-party payors and customers expose us to broadly applicable anti-bribery, fraud and abuse and other healthcare laws and regulations that may constrain the business or financial arrangements and relationships through which we research, market, sell and distribute our product candidates. In addition, we may be subject to patient data privacy and security regulation by the U.S. federal government and the states and the foreign governments in which we conduct our business. Restrictions under applicable federal and state anti-bribery and healthcare laws and regulations, include the following:

- the federal Anti-Kickback Statute, which prohibits, among other things, individuals and entities from knowingly and willfully soliciting, offering, receiving or providing remuneration, directly or indirectly, in cash or in kind, to induce or reward, or in return for, either the referral of an individual for, or the purchase, order or recommendation of, any good or service, for which payment may be made under a federal and state healthcare program such as Medicare and Medicaid. A person or entity does not need to have actual knowledge of the statute or specific intent to violate it in order to have committed a violation;
- the federal criminal and civil false claims and civil monetary penalties laws, including the federal False Claims Act, which can be imposed through civil whistleblower or qui tam actions against individuals or entities, prohibits, among other things, knowingly presenting, or causing to be presented, to the federal government, claims for payment that are false or fraudulent, knowingly making, using or causing to be made or used, a false record or statement material to a false or fraudulent claim, or from knowingly making a false statement to avoid, decrease or conceal an obligation to pay money to the federal government. In addition, certain marketing practices, including off-label promotion, may also violate false claims laws. Moreover, the government may assert that a claim including items and services resulting from a violation of the federal Anti-Kickback Statute constitutes a false or fraudulent claim for purposes of the federal False Claims Act;
- HIPAA, which imposes criminal and civil liability, prohibits, among other things, knowingly and willfully executing, or attempting to execute a scheme to defraud any healthcare benefit program, or knowingly and willfully falsifying, concealing or covering up a material fact or making any materially false statement in connection with the delivery of or payment for healthcare benefits, items or services; similar to the federal Anti-Kickback Statute, a person or entity does not need to have actual knowledge of the statute or specific intent to violate it in order to have committed a violation;
- HIPAA, as amended by HITECH, which impose obligations on certain healthcare providers, health plans, and healthcare clearinghouses, known as covered entities, as well as their business associates that perform certain services involving the storage, use or disclosure of individually identifiable health information, including mandatory contractual terms, with respect to safeguarding the privacy, security, and transmission of individually identifiable health information, and require notification to affected individuals and regulatory authorities of certain breaches of security of individually identifiable health information;
- the federal legislation commonly referred to as Physician Payments Sunshine Act, enacted as part of the ACA, and its implementing regulations, which requires certain manufacturers of covered drugs, devices, biologics and medical supplies that are reimbursable under Medicare, Medicaid, or the Children's Health Insurance Program, with certain exceptions, to report annually to CMS information related to certain payments and other transfers of value to physicians (defined to include doctors, dentists, optometrists, podiatrists and chiropractors) and teaching hospitals, as well as ownership and investment interests held by the physicians described above and their immediate family members, with the information made publicly available on a searchable website;
- the U.S. Foreign Corrupt Practices Act of 1977, as amended, which prohibits, among other things, U.S. companies and their employees and agents from authorizing, promising, offering, or providing, directly or indirectly, corrupt or improper payments or anything else of value to foreign government officials, employees of public international organizations and foreign government owned or affiliated entities, candidates for foreign political office, and foreign political parties or officials thereof;

- analogous state and foreign laws and regulations, such as state anti-kickback and false claims laws, that may apply to sales or marketing arrangements and claims involving healthcare items or services reimbursed by non-governmental third-party payors, including private insurers; and
- certain state laws that require pharmaceutical companies to comply with the pharmaceutical industry's voluntary compliance guidelines and the relevant compliance guidance promulgated by the federal government in addition to requiring drug and therapeutic biologics manufacturers to report information related to payments to physicians and other healthcare providers or marketing expenditures and pricing information, state and local laws that require the registration of pharmaceutical sales representatives, and state laws governing the privacy and security of health information in certain circumstances, many of which differ from each other in significant ways and often are not preempted by HIPAA, thus complicating compliance efforts.

If we or our collaborators, manufacturers or service providers fail to comply with applicable federal, state or foreign laws or regulations, we could be subject to enforcement actions, which could affect our ability to develop, market and sell our products successfully and could harm our reputation and lead to reduced acceptance of our products by the market. These enforcement actions include, among others:

- exclusion from participation in government-funded healthcare programs; and
- exclusion from eligibility for the award of government contracts for our products.

Efforts to ensure that our current and future business arrangements with third parties comply with applicable healthcare laws and regulations could involve substantial costs. It is possible that governmental authorities will conclude that our business practices do not comply with current or future statutes, regulations, agency guidance or case law involving applicable fraud and abuse or other healthcare laws and regulations. If our operations are found to be in violation of any such requirements, we may be subject to significant penalties, including civil, criminal and administrative penalties, damages, fines, disgorgement, imprisonment, the curtailment or restructuring of our operations, loss of eligibility to obtain approvals from the FDA, exclusion from participation in government contracting, healthcare reimbursement or other government programs, including Medicare and Medicaid, integrity oversight and reporting obligations, or reputational harm, any of which could adversely affect our financial results. Although effective compliance programs can mitigate the risk of investigation and prosecution for violations of these laws, these risks cannot be entirely eliminated. Any action against us for an alleged or suspected violation could cause us to incur significant legal expenses and could divert our management's attention from the operation of our business, even if our defense is successful. In addition, achieving and sustaining compliance with applicable laws and regulations may be costly to us in terms of money, time and resources.

Even if we are able to commercialize any product candidate, such product candidate may become subject to unfavorable pricing regulations or third-party coverage and reimbursement policies, which would harm our business.

The regulations that govern regulatory approvals, pricing and reimbursement for new drugs and therapeutic biologics vary widely from country to country. Some countries require approval of the sale price of a drug or therapeutic biologic before it can be marketed. In many countries, the pricing review period begins after marketing approval is granted. In some foreign markets, prescription biopharmaceutical pricing remains subject to continuing governmental control even after initial approval is granted. As a result, we might obtain regulatory approval for a product in a particular country, but then be subject to price regulations that delay our commercial launch of the product, possibly for lengthy time periods and negatively impact the revenues we are able to generate from the sale of the product in that country. Adverse pricing limitations may hinder our ability to recoup our investment in one or more product candidates, even if our product candidates obtain regulatory approval.

Our ability to commercialize any products successfully also will depend in part on the extent to which coverage and adequate reimbursement for these products and related treatments will be available from government authorities, private health insurers and other organizations. Even if we succeed in bringing one or more products to the market, these products may not be considered cost-effective, and the amount reimbursed for any products may be insufficient to allow us to sell our products on a competitive basis. Because our programs are in the early stages of development, we are unable at this time to determine their cost effectiveness or the likely level or method of coverage and reimbursement. Increasingly, the third-party payors who reimburse patients or healthcare providers, such as government and private insurance plans, are requiring that drug companies provide them with predetermined discounts from list prices, and are seeking to reduce the prices charged or the amounts reimbursed for biopharmaceutical products. If the price we are able to charge for any products we develop, or the coverage and reimbursement provided for such products, is inadequate in light of our development and other costs, our return on investment could be affected adversely.

There may be significant delays in obtaining reimbursement for newly approved drugs or therapeutic biologics, and coverage may be more limited than the purposes for which the drug or therapeutic biologic is approved by the FDA or similar foreign regulatory authorities. Moreover, eligibility for reimbursement does not imply that any drug or therapeutic biologic will be reimbursed in all cases or at a rate that covers our costs, including research, development, manufacture, sale and distribution.

Interim reimbursement levels for new drugs or therapeutic biologics, if applicable, may also be insufficient to cover our costs and may not be made permanent. Reimbursement rates may be based on payments allowed for lower cost drugs or therapeutic biologics that are already reimbursed, may be incorporated into existing payments for other services and may reflect budgetary constraints or imperfections in Medicare data. Net prices for drugs or therapeutic biologics may be reduced by mandatory discounts or rebates required by government healthcare programs or private payors and by any future relaxation of laws that presently restrict imports of drugs or therapeutic biologics from countries where they may be sold at lower prices than in the United States. Further, no uniform policy for coverage and reimbursement exists in the United States, and coverage and reimbursement can differ significantly from payor to payor. Third-party payors often rely upon Medicare coverage policy and payment limitations in setting their own reimbursement rates, but also have their own methods and approval process apart from Medicare determinations. Our inability to promptly obtain coverage and adequate reimbursement rates from both government-funded and private payors for new drugs or therapeutic biologics that we develop and for which we obtain regulatory approval could have a material and adverse effect on our business, financial condition, results of operations and prospects.

If in the future we are unable to establish U.S. or global sales and marketing capabilities or enter into agreements with third parties to sell and market our product candidates, we may not be successful in commercializing our product candidates if they are approved and we may not be able to generate any revenue.

We currently do not have a marketing or sales team for the marketing, sales and distribution of any of our product candidates that are able to obtain regulatory approval. To commercialize any product candidates after approval, we must build on a territory-by-territory basis marketing, sales, distribution, managerial and other non-technical capabilities or make arrangements with third parties to perform these services, and we may not be successful in doing so. If our product candidates receive regulatory approval, we may decide to establish an internal sales or marketing team with technical expertise and supporting distribution capabilities to commercialize our product candidates, which will be expensive and time consuming and will require significant attention of our executive officers to manage. For example, some state and local jurisdictions have licensing and continuing education requirements for pharmaceutical sales representatives, which requires time and financial resources. Any failure or delay in the development of our internal sales, marketing and distribution capabilities would adversely impact the commercialization of any of our product candidates that we obtain approval to market.

With respect to the commercialization of all or certain of our product candidates, we may choose to collaborate, either globally or on a territory-by-territory basis, with third parties that have direct sales forces and established distribution systems, either to augment our own sales force and distribution systems or in lieu of our own sales force and distribution systems. If we are unable to enter into such arrangements when needed on acceptable terms, or at all, we may not be able to successfully commercialize any of our product candidates that receive regulatory approval or any such commercialization may experience delays or limitations. If we are not successful in commercializing our product candidates, either on our own or through collaborations with one or more third parties, our future product revenue will suffer and we may incur significant additional losses.

Our product candidates for which we intend to seek approval as biologic products may face competition sooner than anticipated.

With the enactment of the Biologics Price Competition and Innovation Act of 2009, or BPCIA, an abbreviated pathway for the approval of biosimilar and interchangeable biological products was created. The abbreviated regulatory pathway establishes legal authority for the FDA to review and approve biosimilar biologics, including the possible designation of a biosimilar as interchangeable based on its similarity to an existing reference product. Under the BPCIA, an application for a biosimilar product cannot be approved by the FDA until 12 years after the original branded product is approved under a BLA. On March 6, 2015, the FDA approved the first biosimilar product under the BPCIA. However, the law is complex and is still being interpreted and implemented by the FDA. As a result, its ultimate impact, implementation, and meaning are subject to uncertainty. While it is uncertain when the processes intended to implement BPCIA may be fully adopted by the FDA, any such processes could have a material adverse effect on the future commercial prospects for our biological products.

We believe that if any of our product candidates are approved as a biological product under a BLA, it should qualify for the 12-year period of exclusivity. However, there is a risk that the FDA will not consider any of our product candidates to be reference products for competing products, potentially creating the opportunity for biosimilar competition sooner than anticipated. Additionally, this period of regulatory exclusivity does not apply to companies pursuing regulatory approval via their own traditional BLA, rather than via the abbreviated pathway. Moreover, the extent to which a biosimilar, once approved, will be substituted for any one of our reference products that may be approved in a way that is similar to traditional generic substitution for non-biological products is not yet clear, and will depend on a number of marketplace and regulatory factors that are still developing.

If any of our product candidates receives marketing approval and we or others later identify undesirable side effects caused by the product candidates, our ability to market and derive revenue from the product candidates could be compromised.

Undesirable side effects caused by our product candidates could cause regulatory authorities to interrupt, delay or halt clinical trials and could result in more restrictive labeling or the delay or denial of regulatory approval by the FDA or other regulatory authorities. We have only recently initiated our first clinical trial for the first of our product candidates. Given its nature as an ADC, it is likely that there may be side effects associated with its use. Results of our clinical trials could reveal a high and unacceptable severity and prevalence of side effects. In such an event, our clinical trials could be suspended or terminated and the FDA or comparable foreign regulatory authorities could order us to cease further development of or deny approval of our product candidates for any or all targeted indications. Such side effects could also affect patient recruitment or the ability of enrolled patients to complete the clinical trials or result in potential product liability claims. Any of these occurrences may materially and adversely affect our business, financial condition, results of operations and prospects.

Further, clinical trials by their nature utilize a sample of the potential patient population. With a limited number of patients and limited duration of exposure, rare and severe side effects of our product candidates may only be uncovered with a significantly larger number of patients exposed to the product candidate.

In the event that any of our product candidates receive regulatory approval and we or others identify undesirable side effects caused by one of our products, any of the following adverse events could occur:

- regulatory authorities may withdraw their approval of the product or seize the product;
- we may be required to recall the product or change the way the product is administered to patients;
- additional restrictions may be imposed on the marketing of the particular product or the manufacturing processes for the product or any component thereof;
- we may be subject to fines, injunctions or the imposition of civil or criminal penalties;
- regulatory authorities may require the addition of labeling statements, such as a black boxed warning or a contraindication;
- we may be required to create a Medication Guide outlining the risks of such side effects for distribution to patients;
- we could be sued and held liable for harm caused to patients;
- the product may become less competitive; and
- our reputation may suffer.

Any of these occurrences could have a material and adverse effect on our business, financial condition, results of operations and prospects.

If we decide to pursue a Fast Track Designation by the FDA, it may not lead to a faster development or regulatory review or approval process.

We may seek Fast Track Designation for one or more of our product candidates. If a drug or biologic is intended for the treatment of a serious or life-threatening condition and the drug or biologic demonstrates the potential to address unmet medical needs for this condition, the product sponsor may apply for FDA Fast Track Designation. The FDA has broad discretion whether or not to grant this designation, so even if we believe a particular product candidate is eligible for this designation, we cannot assure you that the FDA would decide to grant it. Even if we do receive Fast Track Designation, we may not experience a faster development process, review or approval compared to conventional FDA procedures. The FDA may withdraw Fast Track Designation if it believes that the designation is no longer supported by data from our clinical development program.

While we have been granted Orphan Drug Designation by the FDA for STRO-001 for the treatment of multiple myeloma, if we decide to seek Orphan Drug Designation for some of our other product candidates, we may be unsuccessful or may be unable to maintain the benefits as sociated with Orphan Drug Designation, including the potential for supplemental market exclusivity.

We have been granted Orphan Drug Designation by the FDA for STRO-001 for the treatment of multiple myeloma. As part of our business strategy, we may seek Orphan Drug Designation for our other product candidates, and we may be unsuccessful. Regulatory authorities in some jurisdictions, including the United States and Europe, may designate drugs and therapeutic biologics for relatively small patient populations as orphan drugs. Under the Orphan Drug Act, the FDA may designate a drug or therapeutic biologic as an orphan drug if it is a drug or therapeutic biologic intended to treat a rare disease or condition, which is generally defined as a patient population of fewer than 200,000 individuals in the United States, or a patient population greater than 200,000 in the United States where there is no reasonable expectation that the cost of developing the drug or therapeutic biologic will be recovered from sales in the United States. In the United States, Orphan Drug Designation entitles a party to financial incentives such as opportunities for grant funding toward clinical trial costs, tax advantages and user fee waivers. In addition, if a product that has Orphan Drug Designation subsequently receives the first FDA approval for the disease for which it has such designation, the product is entitled to orphan drug exclusivity, which means that the FDA may not approve any other applications, including a full BLA, to market the same product for the same indication for seven years, except in limited circumstances, such as a showing of clinical superiority to the product with orphan drug exclusivity or where the manufacturer is unable to assure sufficient product quantity.

Even if we obtain Orphan Drug Designation for our product candidates in specific indications, we may not be the first to obtain marketing approval of these product candidates for the orphan-designated indication due to the uncertainties associated with developing pharmaceutical products. In addition, exclusive marketing rights in the United States may be limited if we seek approval for an indication broader than the orphan-designated indication or may be lost if the FDA later determines that the request for designation was materially defective or if the manufacturer is unable to assure sufficient quantities of the product to meet the needs of patients with the rare disease or condition. Further, even if we obtain orphan drug exclusivity for a product, that exclusivity may not effectively protect the product from competition because different drugs or therapeutic biologics with different principal molecular structural features can be approved for the same condition. Even after an orphan product is approved, the FDA can subsequently approve the same drug or therapeutic biologic with the same principal molecular structural features for the same condition if the FDA concludes that the later drug or therapeutic biologic is safer, more effective or makes a major contribution to patient care. Orphan Drug Designation neither shortens the development time or regulatory review time of a drug or therapeutic biologic nor gives the drug or therapeutic biologic any advantage in the regulatory review or approval process. In addition, while we may seek Orphan Drug Designation for our product candidates, we may never receive such designations.

The recent tax reform legislation, which was signed into law on December 22, 2017 reduced the amount of the qualified clinical research costs for a designated orphan product that a sponsor may claim as a credit from 50% to 25%. This may further limit the advantage and may impact our future business strategy of seeking the Orphan Drug Designation.

Risks Related to Our Common Stock

Our quarterly operating results may fluctuate significantly or may fall below the expectations of investors or securities analysts, each of which may cause our stock price to fluctuate or decline.

We expect our operating results to be subject to quarterly fluctuations. Our net loss and other operating results will be affected by numerous factors, including:

- variations in the level of expense related to the ongoing development of our XpressCF+™ Platform, our product candidates or future development programs;
- results of preclinical and clinical trials, or the addition or termination of clinical trials or funding support by us, or existing or future collaborators or licensing partners;
- our execution of any additional collaboration, licensing or similar arrangements, and the timing of payments we may make or receive under existing or future arrangements or the termination or modification of any such existing or future arrangements;
- any intellectual property infringement lawsuit or opposition, interference or cancellation proceeding in which we may become involved;
- additions and departures of key personnel;
- strategic decisions by us or our competitors, such as acquisitions, divestitures, spin-offs, joint ventures, strategic investments or changes in business strategy;

- if any of our product candidates receives regulatory approval, the terms of such approval and market acceptance an d demand for such product candidates;
- regulatory developments affecting our product candidates or those of our competitors; and
- changes in general market and economic conditions.

If our quarterly operating results fall below the expectations of investors or securities analysts, the price of our common stock could decline substantially. Furthermore, any quarterly fluctuations in our operating results may, in turn, cause the price of our common stock to fluctuate substantially. We believe that quarterly comparisons of our financial results are not necessarily meaningful and should not be relied upon as an indication of our future performance.

The market price of our stock may be volatile, and you could lose all or part of your investment.

The trading price of our common stock may be highly volatile and subject to wide fluctuations in response to various factors, some of which we cannot control. As a result of this volatility, investors may not be able to sell their common stock at or above the purchase price. The market price for our common stock may be influenced by many factors, including the other risks described in this section and the following:

- results of preclinical studies and clinical trials of our product candidates, or those of our competitors or our existing or future collaborators;
- regulatory or legal developments in the United States and other countries, especially changes in laws or regulations applicable to our product candidates;
- the success of competitive products or technologies;
- introductions and announcements of new products by us, our future commercialization partners, or our competitors, and the timing of these introductions or announcements;
- actions taken by regulatory agencies with respect to our products, clinical studies, manufacturing process or sales and marketing terms;
- actual or anticipated variations in our financial results or those of companies that are perceived to be similar to us;
- the success of our efforts to acquire or in-license additional technologies, products or product candidates;
- developments concerning any future collaborations, including but not limited to those with our sources of manufacturing supply and our commercialization partners;
- market conditions in the pharmaceutical and biotechnology sectors;
- announcements by us or our competitors of significant acquisitions, strategic collaborations, joint ventures or capital commitments;
- developments or disputes concerning patents or other proprietary rights, including patents, litigation matters and our ability to obtain patent protection for our product candidates and products;
- our ability or inability to raise additional capital and the terms on which we raise it;
- the recruitment or departure of key personnel;
- changes in the structure of healthcare payment systems;
- actual or anticipated changes in earnings estimates or changes in stock market analyst recommendations regarding our common stock, other comparable companies or our industry generally;
- our failure or the failure of our competitors to meet analysts' projections or guidance that we or our competitors may give to the market;
- fluctuations in the valuation of companies perceived by investors to be comparable to us;
- announcement and expectation of additional financing efforts;
- speculation in the press or investment community;
- trading volume of our common stock;
- sales of our common stock by us or our stockholders;
- the concentrated ownership of our common stock;
- changes in accounting principles;
- terrorist acts, acts of war or periods of widespread civil unrest;
- natural disasters and other calamities; and
- general economic, industry and market conditions.

In addition, the stock market in general , and the markets for pharmaceutical, biopharmaceutical and biotechnology stocks in particular, have experienced extreme price and volume fluctuations that have been often unrelated or disproportionate to the operating performance of the issuer. These broad market and industry factors may seriously harm the market price of our common stock, regardless of our actual operating performance. The realization of any of the above risks or any of a broad range of other risks, including those described in this “Risk Factors” section, could have a dramatic and adverse impact on the market price of our common stock.

The future sale and issuance of equity or of debt securities that are convertible into equity will dilute our share capital.

We may choose to raise additional capital in the future, depending on market conditions, strategic considerations and operational requirements. To the extent that additional capital is raised through the sale and issuance of shares or other securities convertible into shares, our stockholders will be diluted. Future issuances of our common stock or other equity securities, or the perception that such sales may occur, could adversely affect the trading price of our common stock and impair our ability to raise capital through future offerings of shares or equity securities. No prediction can be made as to the effect, if any, that future sales of common stock or the availability of common stock for future sales will have on the trading price of our common stock.

A sale of a substantial number of shares of our common stock may cause the price of our common stock to decline.

Sales of a substantial number of shares of our common stock in the public market could occur at any time. If our stockholders sell, or the market perceives that our stockholders intend to sell, substantial amounts of our common stock in the public market before or after the lock-up and other legal restrictions on resale lapse in connection with our IPO, the market price of our common stock could decline significantly. Each of our officers, directors, substantially all of our stockholders and participants in our directed share program have entered into lock-up agreements with the underwriters that restrict their ability to sell or transfer their shares. These lock-up agreements pertaining to our IPO will expire March 25, 2019. However, our underwriters may, in their sole discretion, permit our officers, directors, other current stockholders and participants in our directed share program who are subject to the contractual lock-up to sell shares prior to the expiration of the lock-up agreements. After the lock-up agreements expire, a substantial number of shares of common stock will be eligible for sale in the public market.

We cannot predict what effect, if any, sales of our shares in the public market or the availability of shares for sale will have on the market price of our common stock. However, future sales of substantial amounts of our common stock in the public market, including shares issued upon exercise of outstanding options or warrants, or the perception that such sales may occur, could adversely affect the market price of our common stock.

We also expect that significant additional capital may be needed in the future to continue our planned operations. To raise capital, we may sell common stock, convertible securities or other equity securities in one or more transactions at prices and in a manner we determine from time to time. These sales, or the perception in the market that the holders of a large number of shares intend to sell shares, could reduce the market price of our common stock.

If securities or industry analysts do not publish research or reports about our business, or if they issue an adverse or misleading opinion regarding our stock, our stock price and trading volume could decline.

The trading market for our common stock will be influenced by the research and reports that industry or securities analysts publish about us or our business. We do not have any control over the analysts or the content and opinions included in their reports. If any of the analysts who cover us issue an adverse or misleading opinion regarding us, our business model, our intellectual property or our stock performance, or if our preclinical studies and clinical trials and operating results fail to meet the expectations of analysts, our stock price would likely decline. If one or more of such analysts cease coverage of us or fail to publish reports on us regularly, we could lose visibility in the financial markets, which in turn could cause a decline in our stock price or trading volume.

Our principal stockholders and management own a significant percentage of our stock and will be able to exert significant control over matters subject to stockholder approval.

Based on the beneficial ownership of our common stock as of September 30, 2018, our executive officers, directors and affiliates beneficially owned 35.2% of our outstanding voting stock. As a result, these stockholders, if acting together, could have significant influence over the outcome of corporate actions requiring stockholder approval, including the election of directors, amendment of our organizational documents, any merger, consolidation or sale of all or substantially all of our assets and any other significant corporate transaction. The interests of these stockholders may not be the same as or may even conflict with your interests. For example, these stockholders could delay or prevent a change of control of our company, even if such a change of control would benefit our other stockholders, which could deprive our stockholders of an opportunity to receive a premium for their common stock as part of a sale of our company or our assets and might affect the prevailing market price of our common stock. The significant concentration of stock ownership may adversely affect the trading price of our common stock due to investors' perception that conflicts of interest may exist or arise.

We are an "emerging growth company" and we cannot be certain if the reduced reporting requirements applicable to emerging growth companies will make our common stock less attractive to investors.

We are an "emerging growth company" as defined in the Jumpstart Our Business Startups Act of 2012, or the JOBS Act. For as long as we continue to be an emerging growth company, we may take advantage of exemptions from various reporting requirements that are applicable to other public companies that are not emerging growth companies, including (i) not being required to comply with the auditor attestation requirements of Section 404 of the Sarbanes-Oxley Act of 2002, as amended, or the Sarbanes-Oxley Act, (ii) reduced disclosure obligations regarding executive compensation in our periodic reports, registration statements and proxy statements and (iii) exemptions from the requirements of holding nonbinding advisory stockholder votes on executive compensation and stockholder approval of any golden parachute payments not approved previously.

We could be an emerging growth company for up to five years following the completion of the initial public offering, although circumstances could cause us to lose that status earlier, including if we are deemed to be a "large accelerated filer," which occurs when the market value of our common stock that is held by non-affiliates exceeds $700 million as of the prior June 30, or if we have total annual gross revenue of $1.07 billion or more during any fiscal year before that time, in which cases we would no longer be an emerging growth company as of the following December 31, or if we issue more than $1.0 billion in non-convertible debt during any three-year period before that time, in which case we would no longer be an emerging growth company immediately. Even after we no longer qualify as an emerging growth company, we may still qualify as a "smaller reporting company," which would allow us to take advantage of many of the same exemptions from disclosure requirements, including not being required to comply with the auditor attestation requirements of Section 404 of the Sarbanes-Oxley Act and reduced disclosure obligations regarding executive compensation in our periodic reports and proxy statements. We cannot predict if investors will find our common stock less attractive because we may rely on these exemptions. If some investors find our common stock less attractive as a result, there may be a less active trading market for our common stock and our share price may be more volatile.

Under the JOBS Act, emerging growth companies can also delay adopting new or revised accounting standards until such time as those standards apply to private companies. We have elected to take advantage of the benefits of this extended transition period. Our financial statements may therefore not be comparable to those of companies that comply with such new or revised accounting standards. Until the date that we are no longer an "emerging growth company" or affirmatively and irrevocably opt out of the exemption provided by Section 7(a)(2)(B) of the Securities Act, upon issuance of a new or revised accounting standard that applies to our financial statements and that has a different effective date for public and private companies, we will disclose the date on which adoption is required for non-emerging growth companies and the date on which we will adopt the recently issued accounting standard.

Anti-takeover provisions in our charter documents and under Delaware law could make an acquisition of us, which may be beneficial to our stockholders, more difficult and may prevent attempts by our stockholders to replace or remove our current management.

Our restated certificate of incorporation and our restated bylaws contain provisions that could delay or prevent a change in control of our company. These provisions could also make it difficult for stockholders to elect directors who are not nominated by current members of our board of directors or take other corporate actions, including effecting changes in our management. These provisions:

- establish a classified board of directors so that not all members of our board are elected at one time;
- permit only the board of directors to establish the number of directors and fill vacancies on the board;

- provide that directors may only be removed "for cause" and only with the approval of two-thirds of our stockholders;
- require super-majority voting to amend some provisions in our restated certificate of incorporation and restated bylaws;
- authorize the issuance of "blank check" preferred stock that our board could use to implement a stockholder rights plan;
- eliminate the ability of our stockholders to call special meetings of stockholders;
- prohibit stockholder action by written consent, which requires all stockholder actions to be taken at a meeting of our stockholders;
- prohibit cumulative voting; and
- establish advance notice requirements for nominations for election to our board or for proposing matters that can be acted upon by stockholders at annual stockholder meetings.

In addition, our restated certificate of incorporation, to the fullest extent permitted by law, provides that the Court of Chancery of the State of Delaware is the exclusive forum for: any derivative action or proceeding brought on our behalf; any action asserting a breach of fiduciary duty; any action asserting a claim against us arising pursuant to the Delaware General Corporation Law, or the DGCL, our restated certificate of incorporation, or our restated bylaws; or any action asserting a claim against us that is governed by the internal affairs doctrine. Furthermore, our amended and restated bylaws also provide that unless we consent in writing to the selection of an alternative forum, the federal district courts of the United States shall be the exclusive forum for the resolution of any complaint asserting a cause of action arising under the Securities Act. These choice of forum provisions may limit a stockholder's ability to bring a claim in a judicial forum that it finds favorable for disputes with us or any of our directors, officers, or other employees, which may discourage lawsuits with respect to such claims. Alternatively, if a court were to find the choice of forum provisions contained in our restated certificate of incorporation or amended and restated bylaws to be inapplicable or unenforceable in an action, we may incur additional costs associated with resolving such action in other jurisdictions, which could harm our business, operating results and financial condition.

In addition, Section 203 of the DGCL may discourage, delay or prevent a change in control of our company. Section 203 imposes certain restrictions on mergers, business combinations and other transactions between us and holders of 15% or more of our common stock.

We will incur increased costs as a result of operating as a public company, and our management will be required to devote substantial time to new compliance initiatives and corporate governance practices.

As a public company, and particularly after we are no longer an emerging growth company, we will incur significant legal, accounting and other expenses that we did not incur as a private company. The Sarbanes-Oxley Act, the Dodd-Frank Wall Street Reform and Consumer Protection Act, the listing requirements of the Nasdaq Global Market and other applicable securities rules and regulations impose various requirements on public companies, including establishment and maintenance of effective disclosure and financial controls and corporate governance practices. Our management and other personnel need to devote a substantial amount of time to these compliance initiatives. Moreover, we expect these rules and regulations to substantially increase our legal and financial compliance costs and to make some activities more time consuming and costly. We cannot predict or estimate the amount or timing of additional costs we may incur to respond to these requirements. The impact of these requirements could also make it more difficult for us to attract and retain qualified persons to serve on our board of directors, our board committees or as executive officers. Moreover, these rules and regulations are often subject to varying interpretations, in many cases due to their lack of specificity, and, as a result, their application in practice may evolve over time as new guidance is provided by regulatory and governing bodies. This could result in continuing uncertainty regarding compliance matters and higher costs necessitated by ongoing revisions to disclosure and governance practices.

We are not currently required to comply with the SEC's rules that implement Section 404 of the Sarbanes-Oxley Act, and are therefore not required to make a formal assessment of the effectiveness of our internal control over financial reporting for that purpose. Pursuant to Section 404, we will be required to furnish a report by our management on our internal control over financial reporting. However, while we remain an emerging growth company, we will not be required to include an attestation report on internal control over financial reporting issued by our independent registered public accounting firm. To achieve compliance with Section 404 within the prescribed period, we will be engaged in a process to document and evaluate our internal control over financial reporting, which is both costly and challenging. In this regard, we will need to continue to dedicate internal resources, potentially engage outside consultants and adopt a detailed work plan to assess and document the adequacy of internal control over financial reporting, continue steps to improve control processes as appropriate, validate through testing that controls are functioning as documented and implement a continuous reporting and improvement process for internal control over financial reporting. Despite our efforts, there is a risk that we will not be able to conclude, within the prescribed timeframe or at all, that our internal control over financial reporting is effective as required by Section 404. If we identify one or more material weaknesses, it could result in an adverse reaction in the financial markets due to a loss of confidence in the reliability of our financial statements. In addition, if we are not able to continue to meet these requirements, we may not be able to remain listed on the Nasdaq Global Market.

Because we do not anticipate paying any cash dividends on our capital stock in the foreseeable future, capital appreciation, if any, will be your sole source of gain.

We have never declared or paid cash dividends on our capital stock. We currently intend to retain all of our future earnings, if any, to finance the growth and development of our business. As a result, capital appreciation, if any, of our common stock will be your sole source of gain for the foreseeable future.

We may be subject to securities litigation, which is expensive and could divert management attention.

The market price of our common stock may be volatile and, in the past, companies that have experienced volatility in the market price of their stock have been subject to securities class action litigation. We may be the target of this type of litigation in the future. Securities litigation against us could result in substantial costs and divert our management's attention from other business concerns, which could seriously harm our business.

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

Unregistered Sales of Equity Securities

From July 1, 2018 through September 27, 2018 (the date of the filing of our registration statement on Form S-8) we issued and sold (i) options to employees, directors, consultants, and other service providers to purchase an aggregate of zero shares of common stock under our 2004 Stock Plan, or the 2004 Plan, and 2,570,848 shares of common stock under our 2018 Equity Incentive Plan, or the 2018 Plan, with per share exercise prices at $15 per share; (ii) an aggregate of 312,400 restricted stock units to employees and other service providers to be settled in shares of common stock under our 2018 Plan and (iii) 4,634 shares of common stock to our employees, directors, consultants, and other service providers upon the exercise of options granted under the 2004 Plan, with purchase prices ranging from $5.81 to $14.88 per share, for an aggregate purchase price of $51,000.The sales of the above securities were exempt from registration under the Securities Act of 1933, as amended, or Securities Act, in reliance upon Section 4(2) of the Securities Act, or Rule 701 promulgated under Section 3(b) of the Securities Act as transactions by an issuer not involving any public offering or pursuant to benefit plans and contracts relating to compensation as provided under Rule 701. The recipients of the securities in each of these transactions represented their intentions to acquire the securities for investment only and not with a view to or for sale in connection with any distribution thereof, and appropriate legends were placed upon the stock certificates issued in these transactions

In July 2018, we completed a closing of the Series E redeemable convertible preferred stock financing that resulted in gross proceeds of $52.0 million. In combination with the $33.4 million in gross proceeds we raised in the May and June 2018 closings of the Series E redeemable convertible preferred stock financing, the total gross proceeds from the Series E redeemable convertible preferred stock financing were $85.4 million. This transaction was exempt from the registration requirements of the Securities Act in reliance upon Section 4(2) of the Securities Act or Regulation D promulgated under the Securities Act.

On October 1, 2018, upon completion of our IPO, all shares of our then-outstanding convertible preferred stock automatically converted into 16,028,462 shares of common stock. The issuance of such shares of common stock was exempt from the registration requirements of the Securities Act pursuant to Section 3(a)(9) and Section 4(a)(2) of the Securities Act.

Concurrently with the IPO in a private placement, Merck purchased from us approximately $10.0 million of shares of our common stock at a price per share equal to the IPO price. The securities were issued in this transaction in reliance upon the exemption from the registration requirements of the Securities Act, as set forth in Section 4(2) under the Securities Act.

Additionally, we issued 71,812 shares of common stock upon the exercise of certain outstanding warrants at a weighted average exercise price of $13.65 per share. These transactions were exempt from the registration requirements of the Securities Act in reliance upon Section 4(2) of the Securities Act or Regulation D promulgated under the Securities Act.

Use of Proceeds

On October 1, 2018, we completed our IPO and sold 5,667,000 shares of common stock at an IPO price of $15.00 per share. The offer and sale of all of the shares in the IPO were registered under the Securities Act pursuant to registration statements on Form S-1 (File Nos. 333-227103 and 333-227548), which was declared effective by the SEC on September 26, 2018. No additional shares were registered.

We received net proceeds from the IPO of approximately $74.4 million, after deducting underwriting discounts and commissions of approximately $6.0 million and estimated offering expenses of approximately $4.6 million. Cowen and Company, LLC and Piper Jaffray & Co. acted as joint book-running managers of the offering and as representatives of the underwriters. None of the expenses associated with the IPO were paid to directors, officers, persons owning 10% or more of any class of equity securities, or to their associates, or to our affiliates. In addition to the shares of common stock sold in the IPO, Merck purchased from us approximately $10.0 million of shares of our common stock at a price per share equal to the IPO price.

There has been no material change in the planned use of proceeds from our IPO as described in the Prospectus filed with the SEC pursuant to Rule 424(b)(4) under the Securities Act on September 27, 2018.

Item 3. Defaults Upon Senior Securities.

None.

Item 4. Mine Safety Disclosures.

Not applicable.

Item 5. Other Information.

None.

Item 6. Exhibits.

The exhibits filed or furnished as part of this Quarterly Report on Form 10-Q are set forth on the Exhibit Index, below.

Exhibit Number	Description	Form	File No.	Exhibit Filing Date	Filed/Furnished Herewith
3.1*	Amended and Restated Certificate of Incorporation of Sutro Biopharma, Inc.				X
3.2*	Amended and Restated Bylaws of Sutro Biopharma, Inc.				X
4.1	Omnibus Amendment Agreement, dated July 26, 2018, by and among the Registrant and certain of its stockholders.	S-1	333-227548	8/29/2018	
10.1	Form of Indemnity Agreement by and between the Registrant and its directors and officers	S-1/A	333-227548	9/17/2018	
10.2	2018 Equity Incentive Plan and form of award agreements thereunder	S-1/A	333-227548	9/17/2018	
10.3	2018 Employee Stock Purchase Plan and form of award agreements thereunder	S-1/A	333-227548	9/17/2018	
10.4	Exclusive Patent License and Research Collaboration Agreement, dated July 23, 2018, by and between the Registrant and Merck Sharp & Dohme Corp., a subsidiary of Merck & Co., Inc., Kenilworth, NJ.	S-1/A	333-227548	9/17/2018	
10.5	Common Stock Purchase Agreement, dated July 23, 2018, by and between the Registrant and Merck Sharp & Dohme Corp., a subsidiary of Merck & Co., Inc., Kenilworth, NJ.	S-1	333-227548	8/29/2018	
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				X
101.SCH	XBRL Taxonomy Extension Schema Document				X
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document				X
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document				X
101.LAB	XBRL Taxonomy Extension Label Linkbase Document				X
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document				X

* Filed herewith.

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

SIGNATURES

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

SUTRO BIOPHARMA, INC.

Date: November 14, 2018

By: /s/ William J. Newell
William J. Newell
Chief Executive Officer

Date: November 14, 2018

By: /s/ Edward C. Albini
Edward C. Albini
Chief Financial Officer

Exhibit 3.1

SUTRO BIOPHARMA, INC.

RESTATED CERTIFICATE OF INCORPORATION

Sutro Biopharma, Inc., a Delaware corporation, hereby certifies as follows:

1. The name of the corporation is Sutro Biopharma, Inc. The date of the filing of its original Certificate of Incorporation with the Secretary of State was April 21, 2003 under the name Fundamental Applied Biology, Inc.

2. The Restated Certificate of Incorporation of the corporation attached hereto as Exhibit "A", which is incorporated herein by this reference, and which restates, integrates and further amends the provisions of the Certificate of Incorporation of this corporation as previously amended and/or restated, has been duly adopted by this corporation's Board of Directors and by the stockholders in accordance with Sections 242 and 245 of the General Corporation Law of the State of Delaware, with the approval of the corporation's stockholders having been given by written consent without a meeting in accordance with Section 228 of the General Corporation Law of the State of Delaware.

IN WITNESS WHEREOF, this corporation has caused this Restated Certificate of Incorporation to be signed by its duly authorized officer and the foregoing facts stated herein are true and correct.

Dated: October 1, 2018

SUTRO BIOPHARMA, INC.

By: /s/ William Newell
Name: William Newell
Title: Chief Executive Officer

EXHIBIT "A"

SUTRO BIOPHARMA, INC.

RESTATED CERTIFICATE OF INCORPORATION

ARTICLE I: NAME

The name of the corporation is Sutro Biopharma, Inc. (the "***Corporation***").

ARTICLE II: AGENT FOR SERVICE OF PROCESS

The address of the Corporation's registered office in the State of Delaware is Corporation Trust Center, 1209 Orange Street, Wilmington, County of New Castle, Delaware 19801. The name of the registered agent of the Corporation at that address is The Corporation Trust Company.

ARTICLE III: PURPOSE

The purpose of the Corporation is to engage in any lawful act or activity for which corporations may be organized under the General Corporation Law of the State of Delaware (the "***General Corporation Law***").

ARTICLE IV: AUTHORIZED STOCK

1. **Total Authorized**. The total number of shares of all classes of stock that the Corporation has authority to issue is Three Hundred Ten Million (310,000,000) shares, consisting of two classes: Three Hundred Million (300,000,000) shares of Common Stock, $0.001 par value per share ("***Common Stock***"), and Ten Million (10,000,000) shares of Preferred Stock, $0.001 par value per share ("***Preferred Stock***").

2. **Designation of Additional Series**.

2.1. The Board of Directors of the Corporation (the "***Board***") is authorized, subject to any limitations prescribed by the law of the State of Delaware, to provide for the issuance of the shares of Preferred Stock in one or more series, and, by filing a Certificate of Designation pursuant to the applicable law of the State of Delaware ("***Certificate of Designation***"), to establish from time to time the number of shares to be included in each such series, to fix the designation, vesting, powers (including voting powers), preferences and relative, participating, optional or other special rights, if any, of the shares of each such series and any qualifications, limitations or restrictions thereof, and, except where otherwise provided in the applicable Certificate of Designation, to thereafter increase (but not above the total number of authorized shares of the Preferred Stock) or decrease (but not below the number of shares of such series then outstanding) the number of shares of any such series. The number of authorized shares of Preferred Stock may also be increased or decreased (but not below the number of shares thereof then outstanding) by the affirmative vote of the holders of two-thirds of the voting power of all of the then-outstanding

shares of capital stock of the Corporation entitled to vote thereon, without a separate vote of the holders of the Preferred Stock, irrespective of the provisions of Section 242(b)(2) of the General Corporation Law, unless a separate vote of the holders of one or more series is required pursuant to the terms of any Certificate of Designation; *provided*, *however*, that if two-thirds of the Whole Board (as defined below) has approved such increase or decrease of the number of authorized shares of Preferred Stock, then only the affirmative vote of the holders of a majority of the voting power of all of the then-outstanding shares of the capital stock of the Corporation entitled to vote generally in the election of directors, voting together as a single class, without a separate vote of the holders of the Preferred Stock (unless a separate vote of the holders of one or more series is required pursuant to the terms of any Certificate of Designation), shall be required to effect such increase or decrease. For purposes of this Restated Certificate of Incorporation (as the same may be amended and/or restated from time to time, including pursuant the terms of any Certificate of Designation designating a series of Preferred Stock, this "***Certificate of Incorporation***"), the term "***Whole Board***" shall mean the total number of authorized directors whether or not there exist any vacancies in previously authorized directorships.

2.2 Except as otherwise expressly provided in any Certificate of Designation designating any series of Preferred Stock pursuant to the foregoing provisions of this Article IV, any new series of Preferred Stock may be designated, fixed and determined as provided herein by the Board without approval of the holders of Common Stock or the holders of Preferred Stock, or any series thereof, and any such new series may have powers, preferences and rights, including, without limitation, voting powers, dividend rights, liquidation rights, redemption rights and conversion rights, senior to, junior to or pari passu with the rights of the Common Stock, any series of Preferred Stock or any future class or series of capital stock of the Corporation.

2.3 Each outstanding share of Common Stock shall entitle the holder thereof to one vote on each matter properly submitted to the stockholders of the Corporation for their vote; *provided, however*, that, except as otherwise required by law, holders of Common Stock shall not be entitled to vote on any amendment to this Certificate of Incorporation (including any Certificate of Designation relating to any series of Preferred Stock) that relates solely to the terms of one or more outstanding series of Preferred Stock if the holders of such affected series are entitled, either separately or together as a class with the holders of one or more other such series, to vote thereon pursuant to this Certificate of Incorporation (including any Certificate of Designation relating to any series of Preferred Stock).

ARTICLE V: AMENDMENT OF BYLAWS

The Board shall have the power to adopt, amend or repeal the Bylaws of the Corporation (as the same may be amended and/or restated from time to time, the "***Bylaws***"). Any adoption, amendment or repeal of the Bylaws by the Board shall require the approval of a majority of the Whole Board. The stockholders shall also have power to adopt, amend or repeal the Bylaws; *provided*, *however*, that notwithstanding any other provision of this Certificate of Incorporation or any provision of law that might otherwise permit a lesser or no vote, but in addition to any vote of the holders of any class or series of stock of the Corporation required by applicable law or by this Certificate of Incorporation (including any Preferred Stock issued pursuant to a Certificate of Designation), the affirmative vote of the holders of at least two-thirds of the voting power of all of the then-outstanding shares of the capital stock of the Corporation entitled to vote generally in the election of directors, voting together as a single class, shall be required for the stockholders to adopt, amend or repeal any provision of the Bylaws; *provided further*, that, in the case of any

proposed adoption, amendment or repeal of any provisions of the Bylaws that is approved by the Board and submitted to the stockholders for adoption thereby, if two-thirds of the Whole Board has approved such adoption, amendment or repeal of any provisions of the Bylaws, then only the affirmative vote of the holders of a majority of the voting power of all of the then-outstanding shares of the capital stock of the Corporation entitled to vote generally in the election of directors, voting together as a single class, shall be required to adopt, amend or repeal any provision of the Bylaws.

ARTICLE VI: MATTERS RELATING TO THE BOARD OF DIRECTORS

1. **Director Powers**. Except as otherwise provided by the General Corporation Law or this Certificate of Incorporation, the conduct of the affairs of the Corporation shall be managed by or under the direction of the Board. In addition to the powers and authority expressly conferred upon them by applicable law or by this Certificate of Incorporation or the Bylaws of the Corporation, the directors are hereby empowered to exercise all such powers and do all such acts and things as may be exercised or done by the Corporation.

2. **Number of Directors**. Subject to the special rights of the holders of any series of Preferred Stock to elect additional directors under specified circumstances, the total number of directors constituting the Whole Board shall be fixed from time to time exclusively by resolution adopted by a majority of the Whole Board.

3. **Classified Board**. Subject to the special rights of the holders of one or more series of Preferred Stock to elect additional directors under specified circumstances, the directors shall be divided, with respect to the time for which they severally hold office, into three classes designated as Class I, Class II and Class III, respectively (the "***Classified Board***"). The Board may assign members of the Board already in office to the Classified Board, which assignments shall become effective at the same time the Classified Board becomes effective. Directors shall be assigned to each class in accordance with a resolution or resolutions adopted by the Board. The number of directors in each class shall be divided as nearly equal as reasonably possible. The initial term of office of the Class I directors shall expire at the Corporation's first annual meeting of stockholders following the closing of the Corporation's initial public offering pursuant to an effective registration statement under the Securities Act of 1933, as amended, relating to the offer and sale of Common Stock to the public (the "***Initial Public Offering***"), the initial term of office of the Class II directors shall expire at the Corporation's second annual meeting of stockholders following the closing of the Initial Public Offering and the initial term of office of the Class III directors shall expire at the Corporation's third annual meeting of stockholders following the closing of the Initial Public Offering. At each annual meeting of stockholders following the closing of the Initial Public Offering, directors elected to succeed those directors of the class whose terms then expire shall be elected for a term of office expiring at the third succeeding annual meeting of stockholders after their election.

4. **Term and Removal**. Each director shall hold office until the annual meeting at which such director's term expires and until such director's successor is duly elected and qualified, or until such director's earlier death, resignation, disqualification or removal. Any director may resign at any time upon notice to the Corporation given in writing or by any electronic transmission permitted in the Bylaws. Subject to the special rights of the holders of any series of Preferred Stock, no director may be removed from the Board except for cause and only by the affirmative vote of the holders of at least two-thirds of the voting power of the then-outstanding shares of capital stock of the Corporation entitled to vote thereon, voting together as a single class. No decrease in the authorized number of directors constituting the Whole Board shall shorten the term of any incumbent director.

5. **Board Vacancies and Newly Created Directorships**. Subject to the special rights of the holders of any series of Preferred Stock, any vacancy occurring in the Board for any cause, and any newly created directorship resulting from any increase in the authorized number of directors, shall, unless (a) the Board determines by resolution that any such vacancies or newly created directorships shall be filled by the stockholders or (b) as otherwise provided by law, be filled only by the affirmative vote of a majority of the directors then in office, even if less than a quorum, or by a sole remaining director, and shall not be filled by the stockholders. Any director elected in accordance with the preceding sentence shall hold office for a term expiring at the annual meeting of stockholders at which the term of office of the class to which the director has been assigned expires and until such director's successor shall have been duly elected and qualified, or until such director's earlier death, resignation, disqualification or removal.

6. **Vote by Ballot**. Election of directors need not be by written ballot unless the Bylaws shall so provide.

ARTICLE VII: DIRECTOR LIABILITY

1. **Limitation of Liability**. To the fullest extent permitted by law, no director of the Corporation shall be personally liable for monetary damages for breach of fiduciary duty as a director. Without limiting the effect of the preceding sentence, if the General Corporation Law is hereafter amended to authorize the further elimination or limitation of the liability of a director, then the liability of a director of the Corporation shall be eliminated or limited to the fullest extent permitted by the General Corporation Law, as so amended.

2. **Change in Rights**. Neither any amendment nor repeal of this Article VII, nor the adoption of any provision of this Certificate of Incorporation inconsistent with this Article VII, shall eliminate, reduce or otherwise adversely affect any limitation on the personal liability of a director of the Corporation existing at the time of such amendment, repeal or adoption of such an inconsistent provision.

ARTICLE VIII: MATTERS RELATING TO STOCKHOLDERS

1. **No Action by Written Consent of Stockholders**. Subject to the rights of any series of Preferred Stock then outstanding, no action shall be taken by the stockholders of the Corporation except at a duly called annual or special meeting of stockholders and no action shall be taken by the stockholders of the Corporation by written consent in lieu of a meeting.

2. **Special Meeting of Stockholders**. Special meetings of the stockholders of the Corporation may be called only by the Chairperson of the Board, the Chief Executive Officer, the Lead Independent Director (as defined in the Bylaws), the President, or the Board acting pursuant to a resolution adopted by a majority of the Whole Board and may not be called by any other person or persons.

3. **Advance Notice of Stockholder Nominations and Business Transacted at Special Meetings**. Advance notice of stockholder nominations for the election of directors of the Corporation and of business to be brought by stockholders before any meeting of stockholders of the Corporation shall be given in the manner provided in the Bylaws. Business transacted at special meetings of stockholders shall be limited to the purpose or purposes stated in the notice of meeting.

ARTICLE IX: CHOICE OF FORUM

Unless the Corporation consents in writing to the selection of an alternative forum, the Court of Chancery of the State of Delaware, to the fullest extent permitted by law, shall be the sole and exclusive forum for: (a) any derivative action or proceeding brought on behalf of the Corporation; (b) any action asserting a claim of breach of a fiduciary duty owed by, or other wrongdoing by, any director, officer, stockholder, employee or agent of the Corporation to the Corporation or the Corporation's stockholders; (c) any action asserting a claim against the Corporation or any director, officer, stockholder, employee or agent of the Corporation arising pursuant to any provision of the General Corporation Law, this Certificate of Incorporation or the Bylaws or as to which the General Corporation Law confers jurisdiction on the Court of Chancery of the State of Delaware; (d) any action to interpret, apply, enforce or determine the validity of this Certificate of Incorporation or the Bylaws; or (e) any action asserting a claim against the Corporation or any director, officer, stockholder, employee or agent of the Corporation governed by the internal affairs doctrine. The provision would not apply to suits brought to enforce a duty or liability created by the Securities Exchange Act of 1934.

Any person or entity purchasing or otherwise acquiring or holding any interest in shares of capital stock of the Corporation shall be deemed to have notice of and to have consented to the provisions of this Article IX.

ARTICLE X: AMENDMENT OF CERTIFICATE OF INCORPORATION

If any provision of this Certificate of Incorporation becomes or is declared on any ground by a court of competent jurisdiction to be illegal, unenforceable or void, portions of such provision, or such provision in its entirety, to the extent necessary, shall be severed from this Certificate of Incorporation, and the court will replace such illegal, void or unenforceable provision of this Certificate of Incorporation with a valid and enforceable provision that most accurately reflects the Corporation's intent, in order to achieve, to the maximum extent possible, the same economic, business and other purposes of the illegal, void or unenforceable provision. The balance of this Certificate of Incorporation shall be enforceable in accordance with its terms.

The Corporation reserves the right to amend or repeal any provision contained in this Certificate of Incorporation in the manner prescribed by the laws of the State of Delaware and all rights conferred upon stockholders are granted subject to this reservation; *provided, however*, that, notwithstanding any other provision of this Certificate of Incorporation or any provision of law that might otherwise permit a lesser vote or no vote (but subject to Section 2 of Article IV hereof), but in addition to any vote of the holders of any class or series of the stock of the Corporation required by law or by this Certificate of Incorporation, the affirmative vote of the holders of at least two-thirds of the voting power of all of the then-outstanding shares of the capital stock of the Corporation entitled to vote generally in the election of directors, voting together as a single class, shall be required to amend or repeal this Article X or Article V, Article VI, Article VII or Article VIII; *provided, further*, that if two-thirds of the Whole Board has approved such amendment or repeal of any provisions of this Certificate of Incorporation, then only the affirmative vote of the holders of at least a majority of the voting power of all of the then-outstanding shares of capital stock of the Corporation entitled to vote generally in the election of directors, voting together as a single class (in addition to any other vote of the holders of any class or series of stock of the Corporation required by law of by this Certificate of Incorporation), shall be required to amend or repeal such provisions of this Certificate of Incorporation.

* * * * * * * * * * *

Exhibit 3.2

SUTRO BIOPHARMA, INC.

(a Delaware corporation)

RESTATED BYLAWS

As Adopted September 26, 2018 and

As Effective October 1, 2018

SUTRO BIOPHARMA, INC.

(a Delaware corporation)

RESTATED BYLAWS

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SUTRO BIOPHARMA, INC.

(a Delaware corporation)

RESTATED BYLAWS

As Adopted September 26, 2018 and
As Effective October 1, 2018

ARTICLE I: STOCKHOLDERS

Section 1.1: Annual Meetings

If required by applicable law, an annual meeting of stockholders shall be held for the election of directors at such date and time as the Board of Directors (the "***Board***") of Sutro Biopharma, Inc. (the "***Corporation***") shall each year fix. The meeting may be held either at a place, within or without the State of Delaware as permitted by the Delaware General Corporation Law (the "***DGCL***"), or by means of remote communication as the Board in its sole discretion may determine. Any proper business may be transacted at the annual meeting.

Section 1.2: Special Meetings

Special meetings of stockholders for any purpose or purposes shall be called in the manner set forth in the Restated Certificate of Incorporation of the Corporation (as the same may be amended and/or restated from time to time, the "***Certificate of Incorporation***"). The special meeting may be held either at a place, within or without the State of Delaware, or by means of remote communication as the Board in its sole discretion may determine. Business transacted at any special meeting of stockholders shall be limited to matters relating to the purpose or purposes stated in the notice of the meeting.

Section 1.3: Notice of Meetings

Notice of all meetings of stockholders shall be given in writing or by electronic transmission in the manner provided by applicable law (including, without limitation, as set forth in Section 7.1.1 of these Bylaws) stating the date, time and place, if any, of the meeting, the means of remote communication, if any, by which stockholders and proxy holders may be deemed to be present in person and vote at such meeting, and the record date for determining the stockholders entitled to vote at the meeting (if such date is different from the record date for stockholders entitled to notice of the meeting). In the case of a special meeting, such notice shall also set forth the purpose or purposes for which the meeting is called. Unless otherwise required by applicable law or the Certificate of Incorporation, notice of any meeting of stockholders shall be given not less than ten (10), nor more than sixty (60), days before the date of the meeting to each stockholder of record entitled to vote at such meeting as of the record date for determining the stockholders entitled to notice of the meeting.

Section 1.4: Adjournments

The chairperson of the meeting shall have the power to adjourn the meeting to another time, date and place (if any). Any meeting of stockholders, annual or special, may be adjourned from time to time, and notice need not be given of any such adjourned meeting if the time, date and place (if any) thereof and the means of remote communication (if any) by which stockholders and proxy holders may be deemed to be present in person and vote at such adjourned meeting are announced at the meeting at which the adjournment is taken; *provided*, *however*, that if the adjournment is for more than thirty (30) days, a notice of the adjourned meeting shall be given to each stockholder of record entitled to vote at the meeting. If after the adjournment a new record date for determination of stockholders entitled to vote is fixed for the adjourned meeting, the Board shall fix as the record date for determining stockholders entitled to notice of such adjourned meeting the same or an earlier date as that fixed for determination of stockholders entitled to vote at the adjourned meeting, and shall give notice of the adjourned meeting to each stockholder of record as of the record date so fixed for notice of such adjourned meeting. At the adjourned meeting, the Corporation may transact any business that might have been transacted at the original meeting. To the fullest extent permitted by law, the Corporation may postpone, reschedule or cancel any previously scheduled special or annual meeting of stockholders before it is to be held, regardless of whether any notice or public disclosure with respect to any such meeting has been sent or made pursuant to Section 1.3 hereof or otherwise, in which case notice shall be provided to the stockholders of the new date, time and place, if any, of the meeting as provided in Section 1.3 above.

Section 1.5: Quorum

Except as otherwise provided by applicable law, the Certificate of Incorporation or these Bylaws, at each meeting of stockholders the holders of a majority of the voting power of the shares of stock issued and outstanding and entitled to vote at the meeting, present in person or represented by proxy, shall constitute a quorum for the transaction of business; *provided*, *however*, that where a separate vote by a class or classes or series of stock is required by applicable law or the Certificate of Incorporation, the holders of a majority of the voting power of the shares of such class or classes or series of the stock issued and outstanding and entitled to vote on such matter, present in person or represented by proxy at the meeting, shall constitute a quorum entitled to take action with respect to the vote on such matter. If a quorum shall fail to attend any meeting, the chairperson of the meeting or, if directed to be voted on by the chairperson of the meeting, the holders of a majority of the voting power of the shares entitled to vote who are present in person or represented by proxy at the meeting may adjourn the meeting. Shares of the Corporation's stock belonging to the Corporation (or to another corporation, if a majority of the shares entitled to vote in the election of directors of such other corporation are held, directly or indirectly, by the Corporation), shall neither be entitled to vote nor be counted for quorum purposes; *provided*, *however*, that the foregoing shall not limit the right of the Corporation or any other corporation to vote any shares of the Corporation's stock held by it in a fiduciary capacity and to count such shares for purposes of determining a quorum. A quorum, once established at a meeting, shall not be broken by the withdrawal of enough votes to leave less than a quorum.

Section 1.6: Organization

Meetings of stockholders shall be presided over by (a) such person as the Board may designate, or (b) in the absence of such a person, the Chairperson of the Board, or (c) in the absence of such person, the Lead Independent Director, or, (d) in the absence of such person, the Chief Executive Officer of the Corporation, or (e) in the absence of such person, the President of the Corporation, or (f) in the absence of such person, by a Vice President. Such person shall be chairperson of the meeting and, subject to Section 1.10 hereof, shall determine the order of business and the procedure at the meeting, including such regulation of the manner of voting and the conduct of discussion as seems to him or her to be in order. The Secretary of the Corporation shall act as secretary of the meeting, but in such person's absence the chairperson of the meeting may appoint any person to act as secretary of the meeting.

Section 1.7: Voting; Proxies

Each stockholder of record entitled to vote at a meeting of stockholders may authorize another person or persons to act for such stockholder by proxy. Such a proxy may be prepared, transmitted and delivered in any manner permitted by applicable law. Except as may be required in the Certificate of Incorporation, directors shall be elected by a plurality of the votes cast by the holders of the shares present in person or represented by proxy at the meeting and entitled to vote on the election of directors. At any meeting of stockholders at which a quorum is present, unless a different or minimum vote is required by applicable law, rule or regulation applicable to the Corporation or its securities, the rules or regulations of any stock exchange applicable to the Corporation, the Certificate of Incorporation or these Bylaws, in which case such different or minimum vote shall be the applicable vote on the matter, every matter other than the election of directors shall be decided by the affirmative vote of the holders of a majority of the voting power of the shares of stock entitled to vote on such matter that are present in person or represented by proxy at the meeting and are voted for or against the matter (or if there are two or more classes or series of stock entitled to vote as separate classes, then in the case of each class or series, the holders of a majority of the voting power of the shares of stock of that class or series present in person or represented by proxy at the meeting voting for or against such matter).

Section 1.8: Fixing Date for Determination of Stockholders of Record

In order that the Corporation may determine the stockholders entitled to notice of any meeting of stockholders or any adjournment thereof, the Board may fix a record date, which record date shall not precede the date upon which the resolution fixing the record date is adopted by the Board, and which record date shall, unless otherwise required by law, not be more than sixty (60) nor less than ten (10) days before the date of such meeting. If the Board so fixes a date, such date shall also be the record date for determining the stockholders entitled to vote at such meeting unless the Board determines, at the time it fixes such record date, that a later date on or before the date of the meeting shall be the date for making such determination. If no record date is fixed by the Board, the record date for determining stockholders entitled to notice of or to vote at a meeting of stockholders shall be at the close of business on the day next preceding the day on which notice is given, or, if notice is waived, at the close of business on the day next preceding the day on which the meeting is held. A determination of stockholders of record entitled to notice of or to vote at a meeting of stockholders shall apply to any adjournment of the meeting; *provided*, *however*, that the Board may fix a new record date for determination of stockholders entitled to vote at the

adjourned meeting, and in such case shall also fix as the record date for stockholders entitled to notice of such adjourned meeting the same or an earlier date as that fixed for determination of stockholders entitled to vote in accordance herewith at the adjourned meeting.

In order that the Corporation may determine the stockholders entitled to receive payment of any dividend or other distribution or allotment of any rights, or entitled to exercise any rights in respect of any change, conversion or exchange of stock or for the purpose of any other lawful action, the Board may fix, in advance, a record date, which shall not precede the date upon which the resolution fixing the record date is adopted by the Board and which shall not be more than sixty (60) days prior to such action. If no such record date is fixed by the Board, then the record date for determining stockholders for any such purpose shall be at the close of business on the day on which the Board adopts the resolution relating thereto.

Section 1.9: List of Stockholders Entitled to Vote

The Corporation shall prepare, at least ten (10) days before every meeting of stockholders, a complete list of stockholders entitled to vote at the meeting (*provided*, *however*, if the record date for determining the stockholders entitled to vote is less than ten (10) days before the date of the meeting, the list shall reflect the stockholders entitled to vote as of the tenth (10th) day before the meeting date), arranged in alphabetical order and showing the address of each stockholder and the number of shares registered in the name of each stockholder. Such list shall be open to the examination of any stockholder, for any purpose germane to the meeting, for a period of at least ten (10) days prior to the meeting, either (a) on a reasonably accessible electronic network as permitted by applicable law (*provided* that the information required to gain access to the list is provided with the notice of the meeting), or (b) during ordinary business hours, at the principal place of business of the Corporation. If the meeting is held at a location where stockholders may attend in person, a list of stockholders entitled to vote at the meeting shall also be produced and kept at the time and place of the meeting during the whole time thereof and may be inspected by any stockholder who is present at the meeting. If the meeting is held solely by means of remote communication, then the list shall be open to the examination of any stockholder during the whole time of the meeting on a reasonably accessible electronic network, and the information required to access the list shall be provided with the notice of the meeting. Except as otherwise provided by law, the stock ledger shall be the only evidence as to who are the stockholders entitled to examine the list of stockholders required by this Section 1.9 or to vote in person or by proxy at any meeting of stockholders.

Section 1.10: Inspectors of Elections

1.10.1 Applicability. Unless otherwise required by the Certificate of Incorporation or by applicable law, the following provisions of this Section 1.10 shall apply only if and when the Corporation has a class of voting stock that is: (a) listed on a national securities exchange; (b) authorized for quotation on an interdealer quotation system of a registered national securities association; or (c) held of record by more than two thousand (2,000) stockholders. In all other cases, observance of the provisions of this Section 1.10 shall be optional, and at the discretion of the Board.

1.10.2 Appointment. The Corporation shall, in advance of any meeting of stockholders, appoint one or more inspectors of election to act at the meeting and make a written report thereof. The Corporation may designate one or more persons as alternate inspectors to replace any inspector who fails to act. If no inspector or alternate is able to act at a meeting of stockholders, the person presiding at the meeting shall appoint one or more inspectors to act at the meeting.

1.10.3 Inspector's Oath. Each inspector of election, before entering upon the discharge of his or her duties, shall take and sign an oath faithfully to execute the duties of inspector with strict impartiality and according to the best of such inspector's ability.

1.10.4 Duties of Inspectors. At a meeting of stockholders, the inspectors of election shall (a) ascertain the number of shares outstanding and the voting power of each share, (b) determine the shares represented at a meeting and the validity of proxies and ballots, (c) count all votes and ballots, (d) determine and retain for a reasonable period of time a record of the disposition of any challenges made to any determination by the inspectors, and (e) certify their determination of the number of shares represented at the meeting, and their count of all votes and ballots. The inspectors may appoint or retain other persons or entities to assist the inspectors in the performance of the duties of the inspectors.

1.10.5 Opening and Closing of Polls. The date and time of the opening and the closing of the polls for each matter upon which the stockholders will vote at a meeting shall be announced by the chairperson of the meeting at the meeting. No ballot, proxies or votes, nor any revocations thereof or changes thereto, shall be accepted by the inspectors after the closing of the polls unless the Court of Chancery upon application by a stockholder shall determine otherwise.

1.10.6 Determinations. In determining the validity and counting of proxies and ballots, the inspectors shall be limited to an examination of the proxies, any envelopes submitted with those proxies, any information provided in connection with proxies pursuant to Section 211(a)(2)b.(i) of the DGCL, or in accordance with Sections 211(e) or 212(c)(2) of the DGCL, ballots and the regular books and records of the Corporation, except that the inspectors may consider other reliable information for the limited purpose of reconciling proxies and ballots submitted by or on behalf of banks, brokers, their nominees or similar persons which represent more votes than the holder of a proxy is authorized by the record owner to cast or more votes than the stockholder holds of record. If the inspectors consider other reliable information for the limited purpose permitted herein, the inspectors at the time they make their certification of their determinations pursuant to this Section 1.10 shall specify the precise information considered by them, including the person or persons from whom they obtained the information, when the information was obtained, the means by which the information was obtained and the basis for the inspectors' belief that such information is accurate and reliable.

Section 1.11: Conduct of Meetings

The date and time of the opening and the closing of the polls for each matter upon which the stockholders will vote at a meeting shall be announced at the meeting by the person presiding over the meeting. The Board may adopt by resolution such rules and regulations for the conduct of the meeting of stockholders as it shall deem appropriate. Except to the extent inconsistent with such rules and regulations as adopted by the Board, the person presiding over any meeting of stockholders shall have the right and authority to convene and (for any or no reason) to recess and/or adjourn the meeting, to prescribe such rules, regulations and procedures and to do all such

acts as, in the judgment of such presiding person, are appropriate for the proper conduct of the meeting. Such rules, regulations or procedures, whether adopted by the Board or prescribed by the presiding person of the meeting, may include, without limitation, the following: (i) the establishment of an agenda or order of business for the meeting; (ii) rules and procedures for maintaining order at the meeting and the safety of those present; (iii) limitations on attendance at or participation in the meeting to stockholders entitled to vote at the meeting, their duly authorized and constituted proxies or such other persons as the presiding person of the meeting shall determine; (iv) restrictions on entry to the meeting after the time fixed for the commencement thereof; and (v) limitations on the time allotted to questions or comments by participants. The presiding person at any meeting of stockholders, in addition to making any other determinations that may be appropriate to the conduct of the meeting, shall, if the facts warrant, determine and declare to the meeting that a matter or business was not properly brought before the meeting and if such presiding person should so determine, such presiding person shall so declare at the meeting and any such matter or business not properly brought before the meeting shall not be transacted or considered. Unless and to the extent determined by the Board or the person presiding over the meeting, meetings of stockholders shall not be required to be held in accordance with the rules of parliamentary procedure.

Section 1.12: Notice of Stockholder Business; Nominations.

1.12.1 Annual Meeting of Stockholders.

(a) Nominations of persons for election to the Board and the proposal of other business to be considered by the stockholders may be made at an annual meeting of stockholders only: (i) pursuant to the Corporation's notice of such meeting (or any supplement thereto), (ii) by or at the direction of the Board or any committee thereof or (iii) by any stockholder of the Corporation who was a stockholder of record at the time of giving of the notice provided for in this Section 1.12 (the "***Record Stockholder***"), who is entitled to vote at such meeting and who complies with the notice and other procedures set forth in this Section 1.12 in all applicable respects. For the avoidance of doubt, the foregoing clause (iii) shall be the exclusive means for a stockholder to make nominations or propose business (other than business included in the Corporation's proxy materials pursuant to Rule 14a-8 under the Securities Exchange Act of 1934, as amended (such act, and the rules and regulations promulgated thereunder, the "***Exchange Act***")), at an annual meeting of stockholders, and such stockholder must fully comply with the notice and other procedures set forth in this Section 1.12 to make such nominations or propose business before an annual meeting.

(b) For nominations or other business to be properly brought before an annual meeting by a Record Stockholder pursuant to Section 1.12.1(a) of these Bylaws:

(i) the Record Stockholder must have given timely notice thereof in writing to the Secretary of the Corporation and provide any updates or supplements to such notice at the times and in the forms required by this Section 1.12;

(ii) such other business (other than the nomination of persons for election to the Board) must otherwise be a proper matter for stockholder action;

(iii) if the Proposing Person (as defined below) has provided the Corporation with a Solicitation Notice (as defined below), such Proposing Person must, in the case of a proposal other than the nomination of persons for election to the Board, have delivered a proxy statement

and form of proxy to holders of at least the percentage of the Corporation's voting shares required under applicable law to carry any such proposal, or, in the case of a nomination or nominations, have delivered a proxy statement and form of proxy to holders of a percentage of the Corporation's voting shares reasonably believed by such Proposing Person to be sufficient to elect the nominee or nominees proposed to be nominated by such Record Stockholder, and must, in either case, have included in such materials the Solicitation Notice; and

(iv) if no Solicitation Notice relating thereto has been timely provided pursuant to this Section 1.12, the Proposing Person proposing such business or nomination must not have solicited a number of proxies sufficient to have required the delivery of such a Solicitation Notice under this Section 1.12.

To be timely, a Record Stockholder's notice must be delivered to the Secretary at the principal executive offices of the Corporation not later than the close of business on the ninetieth (90th) day nor earlier than the close of business on the one hundred and twentieth (120th) day prior to the first anniversary of the preceding year's annual meeting (except in the case of the Corporation's first annual meeting following its initial public offering, for which such notice shall be timely if delivered in the same time period as if such meeting were a special meeting governed by Section 1.12.2 of these Bylaws); *provided*, *however*, that in the event that the date of the annual meeting is more than thirty (30) days before or more than seventy (70) days after such anniversary date, notice by the Record Stockholder to be timely must be so delivered (A) no earlier than the close of business on the one hundred and twentieth fifth (120th) day prior to such annual meeting and (B) no later than the close of business on the later of the ninetieth (90th) day prior to such annual meeting or the close of business on the tenth (10th) day following the day on which Public Announcement (as defined below) of the date of such meeting is first made by the Corporation. In no event shall an adjournment or postponement of an annual meeting commence a new time period (or extend any time period) for providing the Record Stockholder's notice. Such Record Stockholder's notice shall set forth:

(x) as to each person whom the Record Stockholder proposes to nominate for election or reelection as a director:

(i) the name, age, business address and residence address of such person;

(ii) the principal occupation or employment of such nominee;

(iii) the class, series and number of any shares of stock of the Corporation that are beneficially owned or owned of record by such person or any Associated Person (as defined below);

(iv) the date or dates such shares were acquired and the investment intent of such acquisition;

(v) all other information relating to such person that would be required to be disclosed in solicitations of proxies for election of directors in an election contest (even if an election contest is not involved), or would be otherwise required, in each case pursuant to and in accordance with Section 14(a) (or any successor provision) under the Exchange Act and the rules and regulations thereunder;

(vi) such person's written consent to being named in the Corporation's proxy statement as a nominee, to the public disclosure of information regarding or related to such person provided to the Corporation by such person or otherwise pursuant to this Section 1.12 and to serving as a director if elected; and

(vii) whether such person meets the independence requirements of the stock exchange upon which the Corporation's Common Stock is primarily traded.

(y) as to any other business that the Record Stockholder proposes to bring before the meeting, a brief description of the business desired to be brought before the meeting, the text of the proposal or business (including the text of any resolutions proposed for consideration and in the event that such business includes a proposal to amend the Bylaws, the text of the proposed amendment), the reasons for conducting such business at the meeting and any material interest in such business of such Proposing Person, including any anticipated benefit to any Proposing Person therefrom; and

(z) as to each Proposing Person giving the notice:

(i) the current name and address of such Proposing Person, including, if applicable, their name and address as they appear on the Corporation's stock ledger, if different;

(ii) the class or series and number of shares of stock of the Corporation that are directly or indirectly owned of record or beneficially owned by such Proposing Person, including any shares of any class or series of the Corporation as to which such Proposing Person has a right to acquire beneficial ownership at any time in the future;

(iii) whether and the extent to which any derivative interest in the Corporation's equity securities (including without limitation any option, warrant, convertible security, stock appreciation right, or similar right with an exercise or conversion privilege or a settlement payment or mechanism at a price related to any class or series of shares of the Corporation or with a value derived in whole or in part from the value of any class or series of shares of the Corporation, whether or not such instrument or right shall be subject to settlement in the underlying class or series of shares of the Corporation or otherwise, and any cash-settled equity swap, total return swap, synthetic equity position or similar derivative arrangement, as well as any rights to dividends on the shares of any class or series of shares of the Corporation that are separated or separable from the underlying shares of the Corporation) or any short interest in any security of the Corporation (for purposes of this Bylaw a person shall be deemed to have a short interest in a security if such person directly or indirectly, through any contract, arrangement, understanding, relationship or otherwise, has the opportunity to profit or share in any profit derived from any increase or decrease in the value of the subject security, including through performance-related fees) is held directly or indirectly by or for the benefit of such Proposing Person, including without limitation whether and the extent to which any ongoing hedging or other transaction or series of transactions has been entered into by or on behalf of, or any other agreement, arrangement or understanding (including without limitation any short position or any borrowing or lending of shares) has been made, the effect or intent of which is to mitigate loss to or manage risk or benefit of share price changes for, or to increase or decrease the voting power of, such Proposing Person with respect to any share of stock of the Corporation;

(iv) any other material relationship between such Proposing Person, on the one hand, and the Corporation, any affiliate of the Corporation or any principal competitor of the Corporation, on the other hand;

(v) any direct or indirect material interest in any material contract or agreement with the Corporation, any affiliate of the Corporation or any principal competitor of the Corporation (including, in any such case, any employment agreement, collective bargaining agreement or consulting agreement);

(vi) any other information relating to such Proposing Person that would be required to be disclosed in a proxy statement or other filing required to be made in connection with solicitations of proxies or consents by such Proposing Person in support of the business proposed to be brought before the meeting pursuant to Section 14(a) (or any successor provision) under the Exchange Act and the rules and regulations thereunder (the disclosures to be made pursuant to the foregoing clauses (iv) through (vi) are referred to as "***Disclosable Interests***"). For purposes hereof "Disclosable Interests" shall not include any information with respect to the ordinary course business activities of any broker, dealer, commercial bank, trust company or other nominee who is a Proposing Person solely as a result of being the stockholder directed to prepare and submit the notice required by these Bylaws on behalf of a beneficial owner;

(vii) such Proposing Person's written consent to the public disclosure of information provided to the Corporation pursuant to this Section 1.12;

(viii) a complete written description of any agreement, arrangement or understanding (whether oral or in writing) (including any knowledge that another person or entity is Acting in Concert (as defined below with such Proposing Person) between or among such Proposing Person, any of its respective affiliates or associates and any other person Acting in Concert with any of the foregoing persons;

(ix) as to each person whom such Proposing Person proposes to nominate for election or re-election as a director, any agreement, arrangement or understanding of such person with any other person or entity other than the Corporation with respect to any direct or indirect compensation, reimbursement or indemnification in connection with service or action as a director known to such Proposing Person after reasonable inquiry;

(x) a representation that the Record Stockholder is a holder of record of stock of the Corporation entitled to vote at such meeting and intends to appear in person or by proxy at the meeting to propose such business or nomination;

(xi) a representation whether such Proposing Person intends (or is part of a group that intends) to deliver a proxy statement or form of proxy to holders of, in the case of a proposal, at least the percentage of the Corporation's voting shares required under applicable law to carry the proposal or, in the case of a nomination or nominations, a sufficient number of holders of the Corporation's voting shares to elect such nominee or nominees (an affirmative statement of such intent being a "***Solicitation Notice***"); and

(xii) any proxy, contract, arrangement, or relationship pursuant to which the Proposing Person has a right to vote, directly or indirectly, any shares of any security of the Corporation.

A stockholder providing written notice required by this Section 1.12 will update and supplement such notice in writing, if necessary, so that the information provided or required to be provided in such notice is true and correct in all material respects as of (i) the record date for determining the stockholders entitled to notice of the meeting and (ii) the close of business on the fifth (5th) business day prior to the meeting and, in the event of any adjournment or postponement thereof, the close of business on the fifth (5th) business day prior to such adjourned or postponed meeting. In the case of an update and supplement pursuant to clause (i) of the foregoing sentence, such update and supplement will be received by the Secretary of the Corporation at the principal executive office of the Corporation not later than five (5) business days after the record date for determining the stockholders entitled to notice of the meeting, and in the case of an update and supplement pursuant to clause (ii) of the foregoing sentence, such update and supplement will be received by the Secretary of the Corporation at the principal executive office of the Corporation not later than two (2) business days prior to the date for the meeting, and, in the event of any adjournment or postponement thereof, two (2) business days prior to such adjourned or postponed meeting.

(c) Notwithstanding anything in the second sentence of Section 1.12.1(b) of these Bylaws to the contrary, in the event that the number of directors to be elected to the Board is increased and there is no Public Announcement by the Corporation naming all of the nominees for director or specifying the size of the increased Board at least one hundred (100) days prior to the first anniversary of the preceding year's annual meeting, or, if the annual meeting is held more than thirty (30) days before or seventy (70 days after such anniversary date, if there is no such Public Announcement by the Corporation at least seventy five (75) days prior to such annual meeting (in each case except for the Corporation's first annual meeting following its initial public offering, for which this Section 1.12.1(c) shall apply if and only if there is no such Public Announcement prior to the date that is ten (10) days prior to the date on which a stockholder's written notice for such annual meeting would otherwise be required to be delivered to the Secretary of the Corporation), a stockholder's notice required by this Section 1.12 shall also be considered timely, but only with respect to nominees for any new directorships created by such increase, if it shall be delivered to the Secretary of the Corporation at the principal executive office of the Corporation no later than the close of business on the tenth (10th) day following the day on which such Public Announcement is first made by the Corporation.

(d) Notwithstanding anything in Section 1.12 or any other provision of the Bylaws to the contrary, any person who has been determined by a majority of the Whole Board to have violated Section 2.12 of these Bylaws or a Board Confidentiality Policy (as defined below) while serving as a director of the Corporation in the preceding five (5) years shall be ineligible to be nominated or be qualified to serve as a member of the Board, absent a prior waiver for such nomination or qualification approved by two-thirds of the Whole Board.

1.12.2 Special Meetings of Stockholders. Only such business shall be conducted at a special meeting of stockholders as shall have been brought before the meeting pursuant to the Corporation's notice of such meeting. Nominations of persons for election to the Board may be made at a special meeting of stockholders at which directors are to be elected pursuant to the Corporation's notice of such meeting (a) by or at the direction of the Board or any committee thereof or (b) provided that the Board has determined that directors shall be elected at such meeting, by any stockholder of the Corporation who is a stockholder of record at the time of giving of notice of the special meeting, who shall be entitled to vote at the meeting and who complies

with the notice and other procedures set forth in this Section 1.12 in all applicable respects. In the event the Corporation calls a special meeting of stockholders for the purpose of electing one or more directors to the Board, any such stockholder may nominate a person or persons (as the case may be), for election to such position(s) as specified in the Corporation's notice of meeting, if the stockholder's notice required by Section 1.12.1(b) of these Bylaws shall be delivered to the Secretary of the Corporation at the principal executive offices of the Corporation (i) no earlier than the one hundred and twentieth (120th) day prior to such special meeting and (ii) no later than the close of business on the later of the ninetieth (90th) day prior to such special meeting or the tenth (10th) day following the day on which Public Announcement is first made of the date of the special meeting and of the nominees proposed by the Board to be elected at such meeting. In no event shall an adjournment or postponement of a special meeting commence a new time period (or extend any time period) for providing such notice.

1.12.3 General.

(a) Except as otherwise expressly provided in any applicable rule or regulation promulgated under the Exchange Act, only such persons who are nominated in accordance with the procedures set forth in this Section 1.12 shall be eligible to be elected at a meeting of stockholders and serve as directors and only such business shall be conducted at a meeting of stockholders as shall have been brought before the meeting in accordance with the procedures set forth in this Section 1.12. Except as otherwise provided by law or these Bylaws, the chairperson of the meeting shall have the power and duty to determine whether a nomination or any other business proposed to be brought before the meeting was made or proposed, as the case may be, in accordance with the procedures set forth in this Section 1.12 and, if any proposed nomination or business is not in compliance herewith, to declare that such defective proposal or nomination shall be disregarded. Notwithstanding the foregoing provisions of this Section 1.12, unless otherwise required by law, if the stockholder (or a Qualified Representative of the stockholder (as defined below)) does not appear at the annual or special meeting of stockholders of the Corporation to present a nomination or proposed business, such nomination shall be disregarded and such proposed business shall not be transacted, notwithstanding that proxies in respect of such vote may have been received by the Corporation.

(b) Notwithstanding the foregoing provisions of this Section 1.12, a stockholder shall also comply with all applicable requirements of the Exchange Act and the rules and regulations thereunder with respect to the matters set forth herein. Nothing in this Section 1.12 shall be deemed to affect any rights of (a) stockholders to request inclusion of proposals in the Corporation's proxy statement pursuant to Rule 14a-8 under the Exchange Act or (b) the holders of any series of Preferred Stock to elect directors pursuant to any applicable provisions of the Certificate of Incorporation.

(c) For purposes of this Section 1.12 the following definitions shall apply:

(A) a person shall be deemed to be "***Acting in Concert***" with another person if such person knowingly acts (whether or not pursuant to an express agreement, arrangement or understanding) in concert with, or toward a common goal relating to the management, governance or control of the Corporation in substantial parallel with, such other person where (1) each person is conscious of the other person's conduct or intent and this awareness is an element in their decision-making processes and (2) at least one additional factor suggests that such persons intend to act in concert or in substantial parallel, which such additional factors may include, without limitation, exchanging information (whether publicly or privately), attending meetings, conducting discussions or making or soliciting invitations to act in concert or in substantial parallel; provided that a person shall not be deemed to be Acting in Concert with any other person solely as a result of the solicitation or receipt of revocable proxies or consents from such other person in response to a solicitation made pursuant to, and in accordance with, Section 14(a) (or any successor provision) of the Exchange Act by way of a proxy or consent solicitation statement filed on Schedule 14A. A person Acting in Concert with another person shall be deemed to be Acting in Concert with any third party who is also Acting in Concert with such other person;

(B) "***Associated Person***" shall mean with respect to any subject stockholder or other person (including any proposed nominee) (1) any person directly or indirectly controlling, controlled by or under common control with such stockholder or other person, (2) any beneficial owner of shares of stock of the Corporation owned of record or beneficially by such stockholder or other person, (3) any associate (as defined in Rule 405 under the Securities Act of 1933, as amended), of such stockholder or other person, and (4) any person directly or indirectly controlling, controlled by or under common control or Acting in Concert with any such Associated Person;

(C) "***Proposing Person***" shall mean (1) the stockholder providing the notice of business proposed to be brought before an annual meeting or nomination of persons for election to the Board at a stockholder meeting, (2) the beneficial owner or beneficial owners, if different, on whose behalf the notice of business proposed to be brought before the annual meeting or nomination of persons for election to the Board at a stockholder meeting is made, and (3) any Associated Person on whose behalf the notice of business proposed to be brought before the annual meeting or nomination of persons for election to the Board at a stockholder meeting is made;

(D) "***Public Announcement***" shall mean disclosure in a press release reported by a national news service or in a document publicly filed by the Corporation with the Securities and Exchange Commission pursuant to Section 13, 14 or 15(d) of the Exchange Act; and

(E) to be considered a "***Qualified Representative***" of a stockholder, a person must be a duly authorized officer, manager, trustee or partner of such stockholder or must be authorized by a writing executed by such stockholder or an electronic transmission delivered by such stockholder to act for such stockholder

as a proxy at the meeting of stockholders and such person must produce such writing or electronic transmission, or a reliable reproduction thereof, at the meeting. The Secretary of the Corporation, or any other person who shall be appointed to serve as secretary of the meeting, may require, on behalf of the Corporation, reasonable and appropriate documentation to verify the status of a person purporting to be a "Qualified Representative" for purposes hereof.

ARTICLE II: BOARD OF DIRECTORS

Section 2.1: Number; Qualifications

The total number of authorized directors constituting the Board (the "***Whole Board***") shall be fixed from time to time in the manner set forth in the Certificate of Incorporation. No decrease in the authorized number of directors constituting the Whole Board shall shorten the term of any incumbent director. Directors need not be stockholders of the Corporation.

Section 2.2: Election; Resignation; Removal; Vacancies

Election of directors need not be by written ballot. Unless otherwise provided by the Certificate of Incorporation and subject to the special rights of the holders of one or more series of Preferred Stock to elect additional directors under specified circumstances, the directors shall be divided, with respect to the time for which they severally hold office, into three classes, designated as Class I, Class II and Class III, respectively. The number of directors in each class shall be divided as nearly equal as reasonably possible. Each director shall hold office until the annual meeting at which such director's term expires and until such director's successor is elected and qualified or until such director's earlier death, resignation, disqualification or removal. Any director may resign by delivering a resignation in writing or by electronic transmission to the Corporation at its principal office or to the Chairperson of the Board, the Chief Executive Officer, or the Secretary. Such resignation shall be effective upon delivery unless it is specified to be effective at a later time or upon the happening of an event. Subject to the special rights of holders of any series of Preferred Stock to elect directors, directors may be removed only as provided by the Certificate of Incorporation and applicable law. All vacancies occurring in the Board and any newly created directorships resulting from any increase in the authorized number of directors shall be filled in the manner set forth in the Certificate of Incorporation.

Section 2.3: Regular Meetings

Regular meetings of the Board may be held at such places, within or without the State of Delaware, and at such times as the Board may from time to time determine. Notice of regular meetings need not be given if the date, times and places thereof are fixed by resolution of the Board.

Section 2.4: Special Meetings

Special meetings of the Board may be called by the Chairperson of the Board, the Chief Executive Officer, the Lead Independent Director or a majority of the members of the Board then in office and may be held at any time, date or place, within or without the State of Delaware, as the person or persons calling the meeting shall fix. Notice of the time, date and place of such meeting shall be given, orally, in writing or by electronic transmission (including electronic mail),

by the person or persons calling the meeting to all directors at least four (4) days before the meeting if the notice is mailed, or at least twenty-four (24) hours before the meeting if such notice is given by telephone, hand delivery, telegram, telex, mailgram, facsimile, electronic mail or other means of electronic transmission. Unless otherwise indicated in the notice, any and all business may be transacted at a special meeting.

Section 2.5: Remote Meetings Permitted

Members of the Board, or any committee of the Board, may participate in a meeting of the Board or such committee by means of conference telephone or other communications equipment by means of which all persons participating in the meeting can hear each other, and participation in a meeting pursuant to conference telephone or other communications equipment shall constitute presence in person at such meeting.

Section 2.6: Quorum; Vote Required for Action

At all meetings of the Board, a majority of the Whole Board shall constitute a quorum for the transaction of business. If a quorum shall fail to attend any meeting, a majority of those present may adjourn the meeting to another place, date or time. Except as otherwise provided herein or in the Certificate of Incorporation, or required by law, the vote of a majority of the directors present at a meeting at which a quorum is present shall be the act of the Board.

Section 2.7: Organization

Meetings of the Board shall be presided over by (a) the Chairperson of the Board, or (b) in the absence of such person, the Lead Independent Director, or (c) in such person's absence, by the Chief Executive Officer, or (d) in such person's absence, by a chairperson chosen by the Board at the meeting. The Secretary shall act as secretary of the meeting, but in such person's absence the chairperson of the meeting may appoint any person to act as secretary of the meeting.

Section 2.8: Unanimous Action by Directors in Lieu of a Meeting

Any action required or permitted to be taken at any meeting of the Board, or of any committee thereof, may be taken without a meeting if all members of the Board or such committee, as the case may be, consent thereto in writing or by electronic transmission, and the writing or writings or electronic transmission or transmissions are filed with the minutes of proceedings of the Board or committee, respectively, in the minute books of the Corporation. Such filing shall be in paper form if the minutes are maintained in paper form and shall be in electronic form if the minutes are maintained in electronic form.

Section 2.9: Powers

Except as otherwise provided by the Certificate of Incorporation or the DGCL, the business and affairs of the Corporation shall be managed by or under the direction of the Board.

Section 2.10: Compensation of Directors

Members of the Board, as such, may receive, pursuant to a resolution of the Board, fees and other compensation for their services as directors, including without limitation their services as members of committees of the Board.

Section 2.11: Confidentiality

Each director shall maintain the confidentiality of, and shall not share with any third party person or entity (including third parties that originally sponsored, nominated or designated such director (the "***Sponsoring Party***")), any non-public information learned in their capacities as directors, including communications among Board members in their capacities as directors. The Board may adopt a board confidentiality policy further implementing and interpreting this bylaw (a "***Board Confidentiality Policy***"). All directors are required to comply with this bylaw and any such Board Confidentiality Policy unless such director or the Sponsoring Party for such director has entered into a specific written agreement with the Corporation, in either case as approved by the Board, providing otherwise with respect to such confidential information.

ARTICLE III: COMMITTEES

Section 3.1: Committees

The Board may designate one or more committees, each committee to consist of one or more of the directors of the Corporation. The Board may designate one or more directors as alternate members of any committee, who may replace any absent or disqualified member at any meeting of the committee. In the absence or disqualification of a member of the committee, the member or members thereof present at any meeting of such committee who are not disqualified from voting, whether or not such member or members constitute a quorum, may unanimously appoint another member of the Board to act at the meeting in place of any such absent or disqualified member. Any such committee, to the extent provided in a resolution of the Board, shall have and may exercise all the powers and authority of the Board in the management of the business and affairs of the Corporation and may authorize the seal of the Corporation to be affixed to all papers that may require it; but no such committee shall have the power or authority in reference to the following matters: (a) approving, adopting, or recommending to the stockholders any action or matter (other than the election or removal of members of the Board) expressly required by the DGCL to be submitted to stockholders for approval or (b) adopting, amending or repealing any bylaw of the Corporation.

Section 3.2: Committee Rules

Each committee shall keep records of its proceedings and make such reports as the Board may from time to time request. Unless the Board otherwise provides, each committee designated by the Board may make, alter and repeal rules for the conduct of its business. In the absence of such rules, each committee shall conduct its business in the same manner as the Board conducts its business pursuant to Article II of these Bylaws. Except as otherwise provided in the Certificate of Incorporation, these Bylaws or the resolution of the Board designating the committee, any committee may create one or more subcommittees, each subcommittee to consist of one or more members of the committee, and may delegate to any such subcommittee any or all of the powers and authority of the committee.

ARTICLE IV: OFFICERS; CHAIRPERSON; LEAD INDEPENDENT DIRECTOR

Section 4.1: Generally

The officers of the Corporation shall consist of a Chief Executive Officer (who may be the Chairperson of the Board or the President), a President, a Secretary and a Treasurer and may consist of such other officers, including, without limitation, a Chief Financial Officer, and one or more Vice Presidents, as may from time to time be appointed by the Board. All officers shall be elected by the Board; *provided*, *however*, that the Board may empower the Chief Executive Officer of the Corporation to appoint any officer other than the Chief Executive Officer, the President, the Chief Financial Officer or the Treasurer. Except as otherwise provided by law, by the Certificate of Incorporation or these Bylaws, each officer shall hold office until such officer's successor is duly elected and qualified or until such officer's earlier resignation, death, disqualification or removal. Any number of offices may be held by the same person. Any officer may resign by delivering a resignation in writing or by electronic transmission to the Corporation at its principal office or to the Chairperson of the Board, the Chief Executive Officer, or the Secretary. Such resignation shall be effective upon delivery unless it is specified to be effective at some later time or upon the happening of some later event. Any vacancy occurring in any office of the Corporation by death, resignation, removal or otherwise may be filled by the Board and the Board may, in its discretion, leave unfilled, for such period as it may determine, any offices. Each such successor shall hold office for the unexpired term of such officer's predecessor and until a successor is duly elected and qualified or until such officer's earlier resignation, death, disqualification or removal.

Section 4.2: Chief Executive Officer

Subject to the control of the Board and such supervisory powers, if any, as may be given by the Board, the powers and duties of the Chief Executive Officer of the Corporation are:

(a) to act as the general manager and, subject to the control of the Board, to have general supervision, direction and control of the business and affairs of the Corporation;

(b) subject to Article I, Section 1.6 of these Bylaws, to preside at all meetings of the stockholders;

(c) subject to Article I, Section 1.2 of these Bylaws, to call special meetings of the stockholders to be held at such times and, subject to the limitations prescribed by law or by these Bylaws, at such places as he or she shall deem proper;

(d) to affix the signature of the Corporation to all deeds, conveyances, mortgages, guarantees, leases, obligations, bonds, certificates and other papers and instruments in writing which have been authorized by the Board or which, in the judgment of the Chief Executive Officer, should be executed on behalf of the Corporation; to sign certificates for shares of stock of the Corporation (if any); and, subject to the direction of the Board, to have general charge of the property of the Corporation and to supervise and control all officers, agents and employees of the Corporation; and

(e) to vote and otherwise act on, or to authorize any officer to vote or otherwise act on, on behalf of the Corporation, in person or by proxy, at any meeting of stockholders of or with respect to any action of stockholders of any other corporation in which this Corporation may hold securities and otherwise to exercise, or authorize any officer otherwise to exercise, any and all rights and powers which this Corporation may possess by reason of its ownership of securities in such other corporation.

The person holding the office of President shall be the Chief Executive Officer of the Corporation unless the Board shall designate another officer to be the Chief Executive Officer. If there is no President, and the Board has not designated any other officer to be the Chief Executive Officer, then the Chairperson of the Board shall be the Chief Executive Officer.

Section 4.3: Chairperson of the Board

Subject to the provisions of Section 2.7 of these Bylaws, the Chairperson of the Board shall have the power to preside at all meetings of the Board and shall have such other powers and duties as provided in these Bylaws and as the Board may from time to time prescribe.

Section 4.4: Lead Independent Director

The Board may, in its discretion, elect a lead independent director from among its members that are Independent Directors (as defined below) (such director, the "***Lead Independent Director***"). The Lead Independent Director shall preside at all meetings at which the Chairperson of the Board is not present and shall exercise such other powers and duties as may from time to time be assigned to him or her by the Board or as prescribed by these Bylaws. For purposes of these Bylaws, "***Independent Director***" has the meaning ascribed to such term under the rules of the exchange upon which the Corporation's Common Stock is primarily traded.

Section 4.5: President

The person holding the office of Chief Executive Officer shall be the President of the Corporation unless the Board shall have designated one individual as the President and a different individual as the Chief Executive Officer of the Corporation. Subject to the provisions of these Bylaws and to the direction of the Board, and subject to the supervisory powers of the Chief Executive Officer (if the Chief Executive Officer is an officer other than the President), and subject to such supervisory powers and authority as may be given by the Board to the Chairperson of the Board, and/or to any other officer, the President shall have the responsibility for the general management and control of the business and affairs of the Corporation and the general supervision and direction of all of the officers, employees and agents of the Corporation (other than the Chief Executive Officer, if the Chief Executive Officer is an officer other than the President) and shall perform all duties and have all powers that are commonly incident to the office of President or that are delegated to the President by the Board.

Section 4.6: Chief Financial Officer

The person holding the office of Chief Financial Officer shall be the Treasurer of the Corporation unless the Board shall have designated another officer as the Treasurer of the Corporation. Subject to the direction of the Board and the Chief Executive Officer, the Chief Financial Officer shall perform all duties and have all powers that are commonly incident to the office of Chief Financial Officer, or as the Board may from time to time prescribe.

Section 4.7: Treasurer

The person holding the office of Treasurer shall have custody of all monies and securities of the Corporation. The Treasurer shall make such disbursements of the funds of the Corporation as are authorized and shall render from time to time an account of all such transactions. The Treasurer shall also perform such other duties and have such other powers as are commonly incident to the office of Treasurer, or as the Board or the Chief Executive Officer may from time to time prescribe.

Section 4.8: Vice President

Each Vice President shall have all such powers and duties as are commonly incident to the office of Vice President or that are delegated to him or her by the Board or the Chief Executive Officer. A Vice President may be designated by the Board to perform the duties and exercise the powers of the Chief Executive Officer or President in the event of the Chief Executive Officer's or President's absence or disability.

Section 4.9: Secretary

The Secretary shall issue or cause to be issued all authorized notices for, and shall keep, or cause to be kept, minutes of all meetings of the stockholders and the Board. The Secretary shall have charge of the corporate minute books and similar records and shall perform such other duties and have such other powers as are commonly incident to the office of Secretary, or as the Board or the Chief Executive Officer may from time to time prescribe.

Section 4.10: Delegation of Authority

The Board may from time to time delegate the powers or duties of any officer of the Corporation to any other officers or agents of the Corporation, notwithstanding any provision hereof.

Section 4.11: Removal

Any officer of the Corporation shall serve at the pleasure of the Board and may be removed at any time, with or without cause, by the Board; *provided* that if the Board has empowered the Chief Executive Officer to appoint any officer of the Corporation, then such officer may also be removed by the Chief Executive Officer. Such removal shall be without prejudice to the contractual rights of such officer, if any, with the Corporation.

ARTICLE V: STOCK

Section 5.1: Certificates; Uncertificated Shares

The shares of capital stock of the Corporation shall be uncertificated shares; *provided*, *however*, that the resolution of the Board that the shares of capital stock of the Corporation shall be uncertificated shares shall not apply to shares represented by a certificate until such certificate is surrendered to the Corporation (or the transfer agent or registrar, as the case may be). Notwithstanding the foregoing, the Board may provide by resolution or resolutions that some or all of any or all classes or series of its stock shall be certificated shares. Every holder of stock

represented by certificates shall be entitled to have a certificate signed by, or in the name of the Corporation, by any two authorized officers of the Corporation (it being understood that each of the Chairperson of the Board, the Vice-Chairperson of the Board, the Chief Executive Officer, the President, any Vice President, the Treasurer, any Assistant Treasurer, the Secretary and any Assistant Secretary shall be an authorized officer for such purpose), representing the number of shares registered in certificate form. Any or all of the signatures on the certificate may be a facsimile. In case any officer, transfer agent or registrar who has signed or whose facsimile signature has been placed upon a certificate shall have ceased to be such officer, transfer agent or registrar before such certificate is issued, it may be issued by the Corporation with the same effect as if such person were an officer, transfer agent or registrar at the date of issue.

Section 5.2: Lost, Stolen or Destroyed Stock Certificates; Issuance of New Certificates or Uncertificated Shares

The Corporation may issue a new certificate of stock or uncertificated shares in the place of any certificate previously issued by it, alleged to have been lost, stolen or destroyed, upon the making of an affidavit of that fact by the person claiming the certificate of stock to be lost, stolen or destroyed, and the Corporation may require the owner of the lost, stolen or destroyed certificate, or such owner's legal representative, to agree to indemnify the Corporation and/or to give the Corporation a bond sufficient to indemnify it, against any claim that may be made against it on account of the alleged loss, theft or destruction of any such certificate or the issuance of such new certificate or uncertificated shares.

Section 5.3: Other Regulations

Subject to applicable law, the Certificate of Incorporation and these Bylaws, the issue, transfer, conversion and registration of shares represented by certificates and of uncertificated shares shall be governed by such other regulations as the Board may establish.

ARTICLE VI: INDEMNIFICATION

Section 6.1: Indemnification of Officers and Directors

Each person who was or is made a party to, or is threatened to be made a party to, or is involved in any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative, investigative, legislative or any other type whatsoever (a "***Proceeding***"), by reason of the fact that such person (or a person of whom such person is the legal representative), is or was a director or officer of the Corporation, while serving as a director or officer of the Corporation or, is or was serving at the request of the Corporation as a director, officer, employee, agent or trustee of another corporation, or of a partnership, joint venture, trust or other enterprise, including service with respect to employee benefit plans (for purposes of this Article VI, an "***Indemnitee***"), shall be indemnified and held harmless by the Corporation to the fullest extent permitted by the DGCL as the same exists or may hereafter be amended (but, in the case of any such amendment, only to the extent that such amendment permits the Corporation to provide broader indemnification rights than such law permitted the Corporation to provide prior to such amendment), against all expenses, liability and loss (including attorneys' fees, judgments, fines, ERISA excise taxes and penalties and amounts paid or to be paid in settlement) reasonably incurred or suffered by such Indemnitee in connection therewith, provided such Indemnitee acted in good

faith and in a manner that the Indemnitee reasonably believed to be in or not opposed to the best interests of the Corporation, and, with respect to any criminal Proceeding, had no reasonable cause to believe the Indemnitee's conduct was unlawful. Such indemnification shall continue as to an Indemnitee who has ceased to be a director or officer of the Corporation and shall inure to the benefit of such Indemnitees' heirs, executors and administrators. Notwithstanding the foregoing, subject to Section 6.5 of these Bylaws, the Corporation shall indemnify any such Indemnitee seeking indemnity in connection with a Proceeding (or part thereof) initiated by such Indemnitee only if such Proceeding (or part thereof) was authorized by the Board or such indemnification is authorized by an agreement approved by the Board.

Section 6.2: Advancement of Expenses

Except as otherwise provided in a written indemnification agreement between the Corporation and an Indemnitee upon written request, the Corporation shall pay all expenses (including attorneys' fees) incurred by an Indemnitee in defending any Proceeding as they are incurred in advance of its final disposition; provided, however, that if the DGCL then so requires, the advancement of such expenses shall be made only upon delivery to the Corporation of an undertaking, by or on behalf of such Indemnitee, to repay such amounts if it shall ultimately be determined by final judicial decision from which there is no appeal that such Indemnitee is not entitled to be indemnified under this Article VI or otherwise. Such expenses (including attorneys' fees) incurred by former directors and officers or other employees and agents of the Corporation or by persons serving at the request of the Corporation as directors, officers, employees or agents of another corporation, partnership, joint venture, trust or other enterprise may be so paid upon such terms and conditions, if any, as the Corporation deems appropriate. The right to advancement of expenses shall not apply to any claim for which indemnity is excluded pursuant to these Bylaws, but shall apply to any Proceeding referenced in Section 6.1 prior to a determination that the person is not entitled to be indemnified by the Corporation.

Section 6.3: Non-Exclusivity of Rights

The rights conferred on any person in this Article VI shall not be exclusive of any other right that such person may have or hereafter acquire under any statute, provision of the Certificate of Incorporation, Bylaws, agreement, vote or consent of stockholders or disinterested directors, or otherwise. Additionally, nothing in this Article VI shall limit the ability of the Corporation, in its discretion, to indemnify or advance expenses to persons whom the Corporation is not obligated to indemnify or advance expenses pursuant to this Article VI.

Section 6.4: Indemnification Contracts

The Board is authorized to cause the Corporation to enter into indemnification contracts with any director, officer, employee or agent of the Corporation, or any person serving at the request of the Corporation as a director, officer, employee, agent or trustee of another corporation, partnership, joint venture, trust or other enterprise, including employee benefit plans, providing indemnification or advancement rights to such person. Such rights may be greater than those provided in this Article VI.

Section 6.5: Right of Indemnitee to Bring Suit

The following shall apply to the extent not in conflict with any indemnification contract provided for in Section 6.4 of these Bylaws.

6.5.1 Right to Bring Suit. If a claim under Section 6.1 or 6.2 of these Bylaws is not paid in full by the Corporation within sixty (60) days after a written claim has been received by the Corporation, except in the case of a claim for an advancement of expenses, in which case the applicable period shall be twenty (20) days, the Indemnitee may at any time thereafter bring suit against the Corporation to recover the unpaid amount of the claim. If successful in whole or in part in any such suit, or in a suit brought by the Corporation to recover an advancement of expenses pursuant to the terms of an undertaking, the Indemnitee shall be entitled to be paid, to the fullest extent permitted by law, the expense of prosecuting or defending such suit. In (a) any suit brought by the Indemnitee to enforce a right to indemnification hereunder (but not in a suit brought by the Indemnitee to enforce a right to an advancement of expenses) it shall be a defense that, and (b) in any suit brought by the Corporation to recover an advancement of expenses pursuant to the terms of an undertaking, the Corporation shall be entitled to recover such expenses upon a final adjudication that, the Indemnitee has not met any applicable standard for indemnification set forth in applicable law.

6.5.2 Effect of Determination. Neither the absence of a determination prior to the commencement of such suit that indemnification of the Indemnitee is proper in the circumstances because the Indemnitee has met the applicable standard of conduct set forth in applicable law, nor an actual determination that the Indemnitee has not met such applicable standard of conduct, shall create a presumption that the Indemnitee has not met the applicable standard of conduct or, in the case of such a suit brought by the Indemnitee, be a defense to such suit.

6.5.3 Burden of Proof. In any suit brought by the Indemnitee to enforce a right to indemnification or to an advancement of expenses hereunder, or brought by the Corporation to recover an advancement of expenses pursuant to the terms of an undertaking, the burden of proving that the Indemnitee is not entitled to be indemnified, or to such advancement of expenses, under this Article VI, or otherwise, shall be on the Corporation.

Section 6.6: Nature of Rights

The rights conferred upon Indemnitees in this Article VI shall be contract rights and such rights shall continue as to an Indemnitee who has ceased to be a director, officer or trustee and shall inure to the benefit of the Indemnitee's heirs, executors and administrators. Any amendment, repeal or modification of any provision of this Article VI that adversely affects any right of an Indemnitee or an Indemnitee's successors shall be prospective only, and shall not adversely affect any right or protection conferred on a person pursuant to this Article VI with respect to any Proceeding involving any occurrence or alleged occurrence of any action or omission to act that took place prior to such amendment, repeal or modification.

Section 6.7: Insurance

The Corporation may purchase and maintain insurance, at its expense, to protect itself and any director, officer, employee or agent of the Corporation or another corporation, partnership, joint venture, trust or other enterprise against any expense, liability or loss asserted against such person and incurred by such person in any such capacity, or arising out of such person's status as such, whether or not the Corporation would have the power to indemnify such person against such expense, liability or loss under the DGCL.

ARTICLE VII: NOTICES

Section 7.1: Notice

7.1.1 Form and Delivery. Except as otherwise specifically required in these Bylaws (including, without limitation, Section 7.1.2 of these Bylaws) or by applicable law, all notices required to be given pursuant to these Bylaws shall be in writing and may (a) in every instance in connection with any delivery to a member of the Board, be effectively given by hand delivery (including use of a delivery service), by depositing such notice in the mail, postage prepaid, or by sending such notice by overnight express courier, facsimile, electronic mail or other form of electronic transmission and (b) be effectively delivered to a stockholder when given by hand delivery, by depositing such notice in the mail, postage prepaid or, if specifically consented to by the stockholder as described in Section 7.1.2 of these Bylaws, by sending such notice by facsimile, electronic mail or other form of electronic transmission. Any such notice shall be addressed to the person to whom notice is to be given at such person's address as it appears on the records of the Corporation. The notice shall be deemed given (a) in the case of hand delivery, when received by the person to whom notice is to be given or by any person accepting such notice on behalf of such person, (b) in the case of delivery by mail, upon deposit in the mail, (c) in the case of delivery by overnight express courier, when dispatched, and (d) in the case of delivery via facsimile, electronic mail or other form of electronic transmission, at the time provided in Section 7.1.2 of these Bylaws.

7.1.2 Electronic Transmission. Without limiting the manner by which notice otherwise may be given effectively to stockholders, any notice to stockholders given by the Corporation under any provision of the DGCL, the Certificate of Incorporation, or these Bylaws shall be effective if given by a form of electronic transmission consented to by the stockholder to whom the notice is given in accordance with Section 232 of the DGCL. Any such consent shall be revocable by the stockholder by written notice to the Corporation. Any such consent shall be deemed revoked if (a) the Corporation is unable to deliver by electronic transmission two consecutive notices given by the Corporation in accordance with such consent and (b) such inability becomes known to the Secretary or an Assistant Secretary of the Corporation or to the transfer agent, or other person responsible for the giving of notice; *provided*, *however*, the inadvertent failure to treat such inability as a revocation shall not invalidate any meeting or other action. Notice given pursuant to this Section 7.1.2 shall be deemed given: (i) if by facsimile telecommunication, when directed to a number at which the stockholder has consented to receive notice; (ii) if by electronic mail, when directed to an electronic mail address at which the stockholder has consented to receive notice; (iii) if by a posting on an electronic network together with separate notice to the stockholder of such specific posting, upon the later of such posting and the giving of such separate notice; and (iv) if by any other form of electronic transmission, when directed to the stockholder.

7.1.3 Affidavit of Giving Notice. An affidavit of the Secretary or an Assistant Secretary or of the transfer agent or other agent of the Corporation that the notice has been given in writing or by a form of electronic transmission shall, in the absence of fraud, be prima facie evidence of the facts stated therein.

Section 7.2: Waiver of Notice

Whenever notice is required to be given under any provision of the DGCL, the Certificate of Incorporation or these Bylaws, a written waiver of notice, signed by the person entitled to notice, or waiver by electronic transmission by such person, whether before or after the time stated therein, shall be deemed equivalent to notice. Attendance of a person at a meeting shall constitute a waiver of notice of such meeting, except when the person attends a meeting for the express purpose of objecting at the beginning of the meeting to the transaction of any business because the meeting is not lawfully called or convened. Neither the business to be transacted at, nor the purpose of, any regular or special meeting of the stockholders, directors or members of a committee of directors need be specified in any waiver of notice.

ARTICLE VIII: INTERESTED DIRECTORS

Section 8.1: Interested Directors

No contract or transaction between the Corporation and one or more of its members of the Board or officers, or between the Corporation and any other corporation, partnership, association or other organization in which one or more of its directors or officers are members of the board of directors or officers, or have a financial interest, shall be void or voidable solely for this reason, or solely because the director or officer is present at or participates in the meeting of the Board or committee thereof that authorizes the contract or transaction, or solely because his, her or their votes are counted for such purpose, if: (a) the material facts as to his, her or their relationship or interest and as to the contract or transaction are disclosed or are known to the Board or the committee, and the Board or committee in good faith authorizes the contract or transaction by the affirmative votes of a majority of the disinterested directors, even though the disinterested directors be less than a quorum; (b) the material facts as to his, her or their relationship or interest and as to the contract or transaction are disclosed or are known to the stockholders entitled to vote thereon, and the contract or transaction is specifically approved in good faith by vote of the stockholders; or (c) the contract or transaction is fair as to the Corporation as of the time it is authorized, approved or ratified by the Board, a committee thereof, or the stockholders.

Section 8.2: Quorum

Interested directors may be counted in determining the presence of a quorum at a meeting of the Board or of a committee which authorizes the contract or transaction.

ARTICLE IX: MISCELLANEOUS

Section 9.1: Fiscal Year

The fiscal year of the Corporation shall be determined by resolution of the Board.

Section 9.2: Seal

The Board may provide for a corporate seal, which may have the name of the Corporation inscribed thereon and shall otherwise be in such form as may be approved from time to time by the Board.

Section 9.3: Form of Records

Any records administered by or on behalf of the Corporation in the regular course of its business, including its stock ledger, books of account and minute books, may be kept on or by means of, or be in the form of, any other information storage device, method or one or more electronic networks or databases (including one or more distributed electronic networks or databases), electronic or otherwise, *provided* that the records so kept can be converted into clearly legible paper form within a reasonable time and otherwise comply with the DGCL. The Corporation shall so convert any records so kept upon the request of any person entitled to inspect such records pursuant to any provision of the DGCL.

Section 9.4: Reliance upon Books, Records and Experts

A member of the Board, or a member of any committee designated by the Board shall, in the performance of such person's duties, be fully protected in relying in good faith upon the books and records of the Corporation and upon such information, opinions, reports or statements presented to the Corporation by any of the Corporation's officers or employees, or committees of the Board, or by any other person as to matters the member reasonably believes are within such other person's professional or expert competence and who has been selected with reasonable care by or on behalf of the Corporation.

Section 9.5: Certificate of Incorporation Governs

In the event of any conflict between the provisions of the Certificate of Incorporation and Bylaws, the provisions of the Certificate of Incorporation shall govern.

Section 9.6: Severability

If any provision of these Bylaws shall be held to be invalid, illegal, unenforceable or in conflict with the provisions of the Certificate of Incorporation, then such provision shall nonetheless be enforced to the maximum extent possible consistent with such holding and the remaining provisions of these Bylaws (including without limitation, all portions of any section of these Bylaws containing any such provision held to be invalid, illegal, unenforceable or in conflict with the Certificate of Incorporation, that are not themselves invalid, illegal, unenforceable or in conflict with the Certificate of Incorporation) shall remain in full force and effect.

Section 9.7: Time Periods

In applying any provision of these Bylaws which requires that an act be done or not be done a specified number of days prior to an event or that an act be done during a period of a specified number of days prior to an event, calendar days shall be used, the day of the doing of the act shall be excluded, and the day of the event shall be included.

ARTICLE X: AMENDMENT

Notwithstanding any other provision of these Bylaws, any alteration, amendment or repeal of these Bylaws, and any adoption of new Bylaws, shall require the approval of the Board or the stockholders of the Corporation as expressly provided in the Certificate of Incorporation.

ARTICLE XI: EXCLUSIVE FORUM

Unless the Corporation consents in writing to the selection of an alternative forum, the federal district courts of the United States of America shall be the exclusive forum for the resolution of any complaint asserting a cause of action arising under the Securities Act of 1933, as amended.

Any person or entity purchasing or otherwise acquiring any interest in any security of the corporation shall be deemed to have notice of and consented to the provisions of this Article XI.

CERTIFICATION OF RESTATED BYLAWS
OF
SUTRO BIOPHARMA, INC.
(a Delaware corporation)

I, Edward Albini, certify that I am Secretary of Sutro Biopharma, Inc., a Delaware corporation (the "***Corporation***"), that I am duly authorized to make and deliver this certification, that the attached Bylaws are a true and complete copy of the Restated Bylaws of the Corporation in effect as of the date of this certificate.

Dated: October 1, 2018

/s/ Edward Albini
Chief Financial Officer and Secretary

Exhibit 31.1

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

I, William J. Newell certify that:

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

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

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

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

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

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

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

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

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

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

Date: November 14, 2018

/s/ William J. Newell
William J. Newell
Chief Executive Officer
(Principal Executive Officer)

Exhibit 31.2

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

I, Edward C. Albini, certify that:

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

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

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

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

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

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

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

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

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

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

Date: November 14, 2018

/s/ Edward C. Albini
Edward C. Albini
Chief Financial Officer
(Principal Accounting Officer and Principal Financial Officer)

Exhibit 32.1

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

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

1. the Quarterly Report on Form 10-Q of the Company for the fiscal quarter ended September 30, 2018 (the "Report") fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended; and

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

Dated: November 14, 2018

/s/ William J. Newell
William J. Newell
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

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

1. the Quarterly Report on Form 10-Q of the Company for the fiscal quarter ended September 30, 2018 (the "Report") fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended; and

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

Dated: November 14, 2018

/s/ Edward C. Albini
Edward C. Albini
Chief Financial Officer
(Principal Financial Officer and Principal Accounting Officer)