INOVIO PHARMACEUTICALS, INC.
Form 10-Q
May 09, 2018

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

FORM 10-Q

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

FOR THE QUARTERLY PERIOD ENDED MARCH 31, 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 NO. 001-14888

INOVIO PHARMACEUTICALS, INC.
(EXACT NAME OF REGISTRANT AS SPECIFIED IN ITS CHARTER)

DELAWARE	33-0969592
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)
660 W. GERMANTOWN PIKE, SUITE 110 PLYMOUTH MEETING, PA	19462
(Address of principal executive offices)	(Zip Code)

REGISTRANT'S TELEPHONE NUMBER, INCLUDING AREA CODE: (267) 440-4200

SECURITIES REGISTERED PURSUANT TO SECTION 12(B) OF THE ACT:

COMMON STOCK, $0.001 PAR VALUE	Nasdaq Global Select Market
(Title of Class)	(Name of Each Exchange on Which Registered)

SECURITIES REGISTERED PURSUANT TO SECTION 12(G) OF THE ACT: NONE

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 x No

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes x 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 definitions of "large accelerated filer," "accelerated filer," "smaller reporting company" and "emerging growth company" in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer	Accelerated filer x
Non-accelerated filer (Do not check if a smaller reporting company)	Smaller reporting company
	Emerging growth company

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

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

The number of shares outstanding of the Registrant's Common Stock, $0.001 par value, was 90,962,081 as of May 4, 2018.

INOVIO PHARMACEUTICALS, INC.
FORM 10-Q

For the Quarterly Period Ended March 31, 2018

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Part I. Financial Information

Item 1. Financial Statements

INOVIO PHARMACEUTICALS, INC.
CONDENSED CONSOLIDATED BALANCE SHEETS

	March 31, 2018 (Unaudited)	December 31, 2017
ASSETS		
Current assets:		
Cash and cash equivalents	$37,508,863	$23,786,579
Short-term investments	75,259,889	103,638,844
Accounts receivable	5,147,851	6,003,205
Accounts receivable from affiliated entities	2,242,569	486,619
Prepaid expenses and other current assets	2,002,015	2,600,906
Prepaid expenses and other current assets from affiliated entities	1,674,981	1,846,007
Total current assets	123,836,168	138,362,160
Fixed assets, net	17,486,103	18,320,176
Investment in affiliated entity - GeneOne	10,467,711	9,069,401
Investment in affiliated entity - PLS	3,307,192	2,325,079
Intangible assets, net	5,605,667	6,009,729
Goodwill	10,513,371	10,513,371
Other assets	2,448,628	2,639,354
Total assets	$173,664,840	$187,239,270
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable and accrued expenses	$15,825,207	$23,278,798
Accounts payable and accrued expenses due to affiliated entities	1,298,741	926,943
Accrued clinical trial expenses	8,428,881	8,611,892
Common stock warrants	488,636	360,795
Deferred revenue	24,088,288	1,175,353
Deferred revenue from affiliated entities	56,167	174,110
Deferred rent	928,098	877,535
Other liabilities	261,325	—
Total current liabilities	51,375,343	35,405,426
Deferred revenue, net of current portion	203,322	215,853
Deferred rent, net of current portion	8,966,846	9,104,416
Deferred tax liabilities	24,766	24,766
Total liabilities	60,570,277	44,750,461
Stockholders' equity:		
Preferred stock	—	—
Common stock	90,705	90,358
Additional paid-in capital	668,844,504	665,775,504
Accumulated deficit	(555,475,779)	(523,356,317)
Accumulated other comprehensive loss	(461,136)	(117,005)
Total Inovio Pharmaceuticals, Inc. stockholders' equity	112,998,294	142,392,540
Non-controlling interest	96,269	96,269
Total stockholders' equity	113,094,563	142,488,809
Total liabilities and stockholders' equity	$173,664,840	$187,239,270

See accompanying notes to unaudited condensed consolidated financial statements.

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INOVIO PHARMACEUTICALS, INC.
CONDENSED CONSOLIDATED STATEMENTS OF OPERATIONS
(Unaudited)

	Three Months Ended March 31,	
	2018	2017
Revenues:		
Revenue under collaborative research and development arrangements	$1,289,046	$4,288,586
Revenue under collaborative research and development arrangements with affiliated entities	148,008	233,330
Grants and miscellaneous revenue	92,590	5,240,233
Grants and miscellaneous revenue from affiliated entity	—	614,036
Total revenues	1,529,644	10,376,185
Operating expenses:		
Research and development	24,577,751	24,542,504
General and administrative	9,698,015	7,767,589
Total operating expenses	34,275,766	32,310,093
Loss from operations	(32,746,122)	(21,933,908)
Other income (expense):		
Interest and other income, net	312,523	340,341
Change in fair value of common stock warrants	(127,841)	116,477
Gain (loss) on investment in affiliated entities	2,380,423	(1,608,817)
Net loss before provision for income taxes	(30,181,017)	(23,085,907)
Provision for income taxes	(2,169,811)	—
Net loss	$(32,350,828)	$(23,085,907)
Net loss per share		
Basic	$(0.36)	$(0.31)
Diluted	$(0.36)	$(0.31)
Weighted average number of common shares outstanding		
Basic	90,451,791	74,152,609
Diluted	90,451,791	74,300,884

See accompanying notes to unaudited condensed consolidated financial statements.

INOVIO PHARMACEUTICALS, INC.
CONDENSED CONSOLIDATED STATEMENTS OF COMPREHENSIVE LOSS
(Unaudited)

	Three Months Ended March 31,	
	2018	2017
Net loss	$(32,350,828)	$(23,085,907)
Other comprehensive income (loss):		
Unrealized loss on investment in affiliated entity	—	(749,961)
Unrealized gain (loss) on short-term investments	(112,765)	203,540
Comprehensive loss	$(32,463,593)	$(23,632,328)

See accompanying notes to unaudited condensed consolidated financial statements.

INOVIO PHARMACEUTICALS, INC.
CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS
(Unaudited)

	Three Months Ended March 31,	
	2018	2017
Cash flows from operating activities:		
Net loss	$(32,350,828)	$(23,085,907)
Adjustments to reconcile net loss to net cash used in operating activities:		
Depreciation	897,709	522,298
Amortization of intangible assets	404,062	406,299
Change in value of common stock warrants	127,841	(116,477)
Stock-based compensation	3,575,750	5,372,797
Amortization of premiums on investments	55,522	69,004
Loss on short-term investments	253,316	51,706
Deferred rent	(87,007)	1,208,085
Loss (gain) on equity investment in affiliated entities	(2,380,423)	1,608,817
Changes in operating assets and liabilities:		
Accounts receivable	855,354	5,956,611
Accounts receivable from affiliated entity	(1,755,950)	(484,550)
Prepaid expenses and other current assets	598,891	(2,457,068)
Prepaid expenses and other current assets from affiliated entity	171,026	(304,345)
Other assets	190,726	587,993
Accounts payable and accrued expenses	(6,363,762)	(5,643,054)
Accrued clinical trial expenses	(183,011)	(458,516)
Accounts payable and accrued expenses due to affiliated entity	371,798	(543,410)
Deferred revenue	22,900,404	2,207,277
Deferred revenue from affiliated entity	(117,943)	(125,000)
Other liabilities	261,325	—
Net cash used in operating activities	(12,575,200)	(15,227,440)
Cash flows from investing activities:		
Purchases of investments	(9,568,082)	(5,925,232)
Maturities of investments	37,525,434	24,882,273
Purchases of capital assets	(1,153,465)	(789,257)
Net cash provided by investing activities	26,803,887	18,167,784
Cash flows from financing activities:		
Proceeds (payments) for stock option and warrant exercises, net of tax payments	(506,403)	826,437
Net cash (used in) provided by financing activities	(506,403)	826,437
Increase in cash and cash equivalents	13,722,284	3,766,781
Cash and cash equivalents, beginning of period	23,786,579	19,136,472
Cash and cash equivalents, end of period	$37,508,863	$22,903,253
Supplemental disclosure of non-cash activities		
Change in amounts accrued for purchases of property and equipment	$164,288	$511,052

See accompanying notes to unaudited condensed consolidated financial statements.

INOVIO PHARMACEUTICALS, INC.
NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS
(Unaudited)

1. Organization and Operations

Inovio Pharmaceuticals, Inc. (the “Company” or “Inovio”), a clinical stage biopharmaceutical company, develops active SynCon® DNA immunotherapies and vaccines focused on preventing and treating cancers and infectious diseases. Inovio’s DNA-based immunotherapies, in combination with its proprietary CELLECTRA® delivery devices, are intended to generate optimal antigen production in vivo, in particular functional CD8+ killer T cell and antibody responses, to fight target diseases. Inovio’s synthetic products are based on its SynCon® immunotherapy design. The Company and its collaborators are currently conducting or planning clinical programs of its proprietary SynCon® immunotherapies for HPV-caused pre-cancers and cancers; prostate, breast, lung and pancreatic cancers; hepatitis B virus ("HBV"); HIV; Ebola; Middle East Respiratory Syndrome ("MERS"); and Zika virus.

The Company's partners and collaborators include MedImmune, LLC, The Wistar Institute, University of Pennsylvania, GeneOne Life Science Inc. ("GeneOne"), ApolloBio Corporation, Regeneron Pharmaceuticals, Inc., Genentech, Inc., Plumbline Life Sciences, Inc., Drexel University, National Microbiology Laboratory of the Public Health Agency of Canada, National Institute of Allergy and Infectious Diseases (“NIAID”), United States Military HIV Research Program (“USMHRP”), U.S. Army Medical Research Institute of Infectious Diseases (“USAMRIID”), National Institutes of Health ("NIH"), HIV Vaccines Trial Network (“HVTN”), Defense Advanced Research Projects Agency (“DARPA”), Parker Institute for Cancer Immunotherapy, and Coalition for Epidemic Preparedness Innovations (“CEPI”). Inovio was incorporated in Delaware in June 2001 and has its principal executive offices in Plymouth Meeting, Pennsylvania.

2. Basis of Presentation

The accompanying unaudited condensed consolidated financial statements of Inovio have been prepared in accordance with U.S. generally accepted accounting principles (“U.S. GAAP”) as contained in the Financial Accounting Standards Board ("FASB") Accounting Standards Codification ("ASC") for interim financial information and with instructions to Form 10-Q and Article 10 of Regulation S-X. Accordingly, they do not include all of the information and footnotes required by U.S. GAAP for complete financial statements. The condensed consolidated balance sheet as of March 31, 2018 and the condensed consolidated statements of operations, condensed consolidated statements of comprehensive loss and the condensed consolidated statements of cash flows for the three months ended March 31, 2018 and 2017, are unaudited, but include all adjustments (consisting of normal recurring adjustments) that the Company considers necessary for a fair presentation of the financial position, results of operations and cash flows for the periods presented. The results of operations for the three months ended March 31, 2018 shown herein are not necessarily indicative of the results that may be expected for the year ending December 31, 2018, or for any other period. These unaudited financial statements, and notes thereto, should be read in conjunction with the audited consolidated financial statements for the year ended December 31, 2017, included in the Company's Annual Report on Form 10-K filed with the U.S. Securities and Exchange Commission (“SEC”) on March 14, 2018. The balance sheet at December 31, 2017 has been derived from the audited financial statements at that date, but does not include all of the information and footnotes required by U.S. GAAP for complete financial statements. The Company has evaluated subsequent events after the balance sheet date of March 31, 2018 through the date it filed these unaudited condensed consolidated financial statements with the SEC.

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

3. Critical Accounting Policies

Revenue Recognition

Effective January 1, 2018, the Company adopted Accounting Standards Update (“ASU”) 2014-09, Revenue from Contracts with Customers (“Topic 606”) using the modified retrospective method which consisted of applying and

recognizing the cumulative effect of Topic 606 at the date of initial application. Topic 606 supersedes the revenue recognition requirements in Accounting Standards Codification (“ASC”) Topic 605, Revenue Recognition (“Topic 605”), including most industry-specific revenue recognition guidance throughout the Industry Topics of the ASC. All periods prior to the adoption date of Topic 606 have not been restated to reflect the impact of the adoption of Topic 606, but continue to be accounted for and presented under Topic 605.

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The following paragraphs in this section describe the Company's revenue recognition accounting policies under Topic 606 upon adoption on January 1, 2018. Refer to Note 2 to the consolidated financial statements included in the Company's Annual Report on Form 10-K for the year ended December 31, 2017 for revenue recognition accounting policies under Topic 605.

The Company will recognize revenue when it transfers promised goods or services to customers in an amount that reflects the consideration to which it expects to be entitled in exchange for those goods or services. To determine revenue recognition for contracts with customers, the Company performs the following five steps: (i) identify the contract(s) with a customer; (ii) identify the performance obligations in the contract; (iii) determine the transaction price; (iv) allocate the transaction price to the performance obligations in the contract; and (v) recognize revenue when (or as) the Company satisfies its performance obligations. At contract inception, the Company will assess the goods or services agreed upon within each contract and assess whether each good or service is distinct and determine those that are performance obligations. The Company then recognizes as revenue the amount of the transaction price that is allocated to the respective performance obligation when (or as) the performance obligation is satisfied.

Collaborative Arrangements

The Company enters into collaborative arrangements with partners that typically include payment of one or more of the following: (i) license fees; (ii) milestone payments related to the achievement of developmental, regulatory, or commercial goals; and (iii) royalties on net sales of licensed products. Where a portion of non-refundable, up-front fees or other payments received are allocated to continuing performance obligations under the terms of a collaborative arrangement, they are recorded as deferred revenue and recognized as revenue when (or as) the underlying performance obligation is satisfied.

As part of the accounting for these arrangements, the Company must develop estimates and assumptions that require judgment of management to determine the underlying stand-alone selling price for each performance obligation which determines how the transaction price is allocated among the performance obligation. The stand-alone selling price may include items such as forecasted revenues, development timelines, discount rates and probabilities of technical and regulatory success. The Company evaluates each performance obligation to determine if it can be satisfied at a point in time or over time. In addition, variable consideration must be evaluated to determine if it is constrained and, therefore, excluded from the transaction price.

License Fees

If a license to intellectual property is determined to be distinct from the other performance obligations identified in the arrangement, the Company will recognize revenues from non-refundable, up-front fees allocated to the license when the license is transferred to the licensee and the licensee is able to use and benefit from the license. For licenses that are bundled with other promises, the Company will utilize judgment to assess the nature of the combined performance obligation to determine whether the combined performance obligation is satisfied over time or at a point in time and, if over time, the appropriate method of measuring progress for purposes of recognizing revenue. The Company evaluates the measure of progress each reporting period and, if necessary, adjusts the measure of performance and related revenue recognition.

Milestone Payments

At the inception of each arrangement that includes milestone payments (variable consideration), the Company evaluates whether the milestones are considered probable of being reached and estimates the amount to be included in the transaction price using the most likely amount method. If it is probable that a significant revenue reversal would not occur, the associated milestone value is included in the transaction price. Milestone payments that are not within the Company's or its collaboration partner’s control, such as regulatory approvals, are generally not considered probable of being achieved until those approvals are received. The transaction price is then allocated to each performance obligation on a relative stand-alone selling price basis, for which the Company recognizes revenue as or when the performance obligations under the contract are satisfied. At the end of each subsequent reporting period, the Company re-evaluates the probability of achieving such milestones and any related constraint, and if necessary, adjusts its estimate of the overall transaction price. Any such adjustments are recorded on a cumulative catch-up basis, which would affect license, collaboration or other revenues and earnings in the period of adjustment.

Royalties

For arrangements that include sales-based royalties, including milestone payments based on the level of sales, and for which the license is deemed to be the predominant item to which the royalties relate, the Company recognizes revenue at the later of (i) when the related sales occur, or (ii) when the performance obligation to which some or all of the royalty has been allocated has been satisfied (or partially satisfied). To date, the Company has not recognized any royalty revenue resulting from any of its collaborative arrangements.

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Under certain collaborative arrangements, the Company has been reimbursed for a portion of its research and development ("R&D") expenses, including costs of drug supplies. When these R&D services are performed under a reimbursement or cost sharing model with its collaboration partner, the Company records these reimbursements as a reduction of R&D expense in its condensed consolidated statements of operations.

Valuation of Intangible Assets and Goodwill

Intangible assets are amortized over their estimated useful lives ranging from 2 to 18 years. Acquired intangible assets are continuously being developed for the future economic viability contemplated at the time of acquisition. The Company is concurrently conducting preclinical studies and clinical trials using the acquired intangibles and has entered into licensing agreements for the use of these acquired intangibles.

Historically, the Company has recorded patents at cost and amortized these costs using the straight-line method over the expected useful lives of the patents or 17 years, whichever is less. Patent cost consists of the consideration paid for patents and related legal costs. Effective as of the acquisition of VGX Pharmaceuticals, Inc. ("VGX") in 2009, all new patent costs are expensed as incurred, with patent costs capitalized as of that date continuing to be amortized over the expected life of the patent. License costs are recorded based on the fair value of consideration paid and are amortized using the straight-line method over the shorter of the expected useful life of the underlying patents or the term of the related license agreement to the extent the license has an alternative future use. As of March 31, 2018 and December 31, 2017, the Company’s intangible assets resulting from the acquisition of VGX, as well as the acquisitions of two other companies, Inovio AS and Bioject Medical Technologies, Inc. ("Bioject"), and additional intangibles including previously capitalized patent costs and license costs, net of accumulated amortization, totaled $5.6 million and $6.0 million, respectively.

The determination of the value of intangible assets requires management to make estimates and assumptions that affect the Company’s consolidated financial statements. The Company assesses potential impairments to intangible assets when there is evidence that events or changes in circumstances indicate that the carrying amount of an asset may not be recovered. The Company’s judgments regarding the existence of impairment indicators and future cash flows related to intangible assets are based on operational performance of its acquired businesses, market conditions and other factors. If impairment is indicated, the Company will reduce the carrying value of the intangible asset to fair value. While current and historical operating and cash flow losses are potential indicators of impairment, the Company believes the future cash flows to be received from its intangible assets will exceed the intangible assets’ carrying value, and accordingly, the Company has not recognized any impairment losses through March 31, 2018.

Goodwill represents the excess of acquisition cost over the fair value of the net assets of acquired businesses. Goodwill is reviewed for impairment at least annually at November 30, or more frequently if an event occurs indicating the potential for impairment. During its goodwill impairment review, the Company may assess qualitative factors to determine whether it is more likely than not that the fair value of its reporting unit is less than its carrying amount, including goodwill. The qualitative factors include, but are not limited to, macroeconomic conditions, industry and market considerations, and the overall financial performance of the Company. If, after assessing the totality of these qualitative factors, the Company determines that it is not more likely than not that the fair value of its reporting unit is less than its carrying amount, then no additional assessment is deemed necessary. Otherwise, the Company proceeds to perform the two-step test for goodwill impairment. The first step involves comparing the estimated fair value of the reporting unit with its carrying value, including goodwill. If the carrying amount of the reporting unit exceeds its fair value, the Company performs the second step of the goodwill impairment test to determine the amount of loss, which involves comparing the implied fair value of the goodwill to the carrying value of the goodwill. The Company may also elect to bypass the qualitative assessment in a period and elect to proceed to perform the first step of the goodwill impairment test. The Company performed its annual assessment for goodwill impairment as of November 30, 2017, identifying no impairment.

Although there are inherent uncertainties in this assessment process, the estimates and assumptions the Company is using are consistent with its internal planning. If these estimates or their related assumptions change in the future, the Company may be required to record an impairment charge on all or a portion of its goodwill and intangible assets. Furthermore, the Company cannot predict the occurrence of future impairment triggering events nor the impact such events might have on its reported asset values. Future events could cause the Company to conclude that impairment

indicators exist and that goodwill or other intangible assets associated with its acquired businesses are impaired. Any resulting impairment loss could have an adverse impact on the Company's results of operations. See Note 9 for further discussion of the Company's goodwill and intangible assets.

Research and Development Expenses

The Company's activities have largely consisted of research and development efforts related to developing electroporation delivery technologies and DNA immunotherapies and vaccines. Research and development expenses consist of expenses incurred in performing research and development activities including salaries and benefits, facilities and other

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overhead expenses, clinical trials, contract services and other outside expenses. Research and development expenses are charged to operations as they are incurred. These expenses result from the Company's independent research and development efforts as well as efforts associated with collaborations and licensing arrangements. The Company reviews and accrues clinical trial expense based on work performed, which relies on estimates of total costs incurred based on patient enrollment, completion of studies and other events. The Company follows this method since reasonably dependable estimates of the costs applicable to various stages of a research agreement or clinical trial can be made. Accrued clinical trial costs are subject to revisions as trials progress. Revisions are charged to expense in the period in which the facts that give rise to the revision become known. Historically, revisions have not resulted in material changes to research and development expense; however, a modification in the protocol of a clinical trial or cancellation of a trial could result in a charge to the Company's results of operations.

4. Principles of Consolidation

These unaudited condensed consolidated financial statements include the accounts of Inovio Pharmaceuticals, Inc. and its subsidiaries. The Company consolidates its wholly-owned subsidiaries Genetronics, Inc., VGX and GENEOS Therapeutics, Inc., and records a non-controlling interest for the 15% of VGX Animal Health, Inc., a subsidiary of VGX, that it did not own as of March 31, 2018 and December 31, 2017. All intercompany accounts and transactions have been eliminated upon consolidation.

5. Impact of Recently Issued Accounting Standards

The recent accounting pronouncements below may have a significant effect on the Company's financial statements. Recent accounting pronouncements that are not anticipated to have an impact on or are unrelated to the Company's financial condition, results of operations, or related disclosures are not discussed.

ASU No. 2014-09. In May 2014, the FASB issued ASU No. 2014-09, Revenue from Contracts with Customers ("Topic 606”), which amended the existing accounting standards for revenue recognition, outlines a comprehensive revenue recognition model and supersedes most current revenue recognition guidance. The new standard requires a company to recognize revenue upon transfer of goods or services to a customer at an amount that reflects the expected consideration to be received in exchange for those goods or services. The amended guidance defines a five-step approach for recognizing revenue, which will require a company to use more judgment and make more estimates than under the current guidance. The Company adopted this new standard effective January 1, 2018, using the modified retrospective transition method. The impact of adoption of Topic 606 on the Company's existing agreements was as follows:

Collaboration Agreement with MedImmune

The Company has determined that no cumulative catch-up adjustment was required.

Grant Agreements

The Company has determined that as of January 1, 2018, accounting for the Company’s various grant agreements falls under the contributions guidance under Subtopic 958-605, Not-for-Profit Entities-Revenue Recognition, which is outside the scope of Topic 606, as the government agencies granting the Company funds are not receiving reciprocal value for their contributions. Beginning on January 1, 2018, all contributions received from current grant agreements have been recorded as a contra-expense as opposed to revenue on the consolidated statement of operations. For the three months ended March 31, 2018, $2.2 million was recorded as contra-research and development expense which previously would have been recorded as grant revenue.

The following table illustrates the impact that adopting Topic 606 has had on our reported results in the condensed consolidated statement of operations.

	Balances Without Adoption of Topic 606 at March 31, 2018	Impact of Adopting Topic 606	As reported at March 31, 2018
Revenues:			
Revenue under collaborative research and development arrangements	$1,289,046	$—	$1,289,046
Revenue under collaborative research and development arrangements with affiliated entities	148,008	—	148,008
Grants and miscellaneous revenue	1,850,341	(1,757,751)	92,590
Grants and miscellaneous revenue from affiliated entity	464,400	(464,400)	—
Total revenues	3,751,795	(2,222,151)	1,529,644
Operating expenses:			
Research and development	22,355,600	(2,222,151)	24,577,751
General and administrative	9,698,015	—	9,698,015
Total operating expenses	$32,053,615	$(2,222,151)	$34,275,766

ASU No. 2016-01. In January 2016, the FASB issued ASU No. 2016-01, Recognition and Measurement of Financial Assets and Financial Liabilities. The amended guidance requires the Company to measure and record equity investments, except those accounted for under the equity method of accounting that have a readily determinable fair value, at fair value and for the Company to recognize the changes in fair value in its consolidated statements of operations, instead of recognizing unrealized gains and losses through accumulated other comprehensive income (loss), as done under the previous guidance. The amended guidance also changes several disclosure requirements for financial instruments, including the methods and significant assumptions used to estimate fair value. The standard was effective for annual reporting periods beginning after December 15, 2017, including interim periods within those annual reporting periods. The Company adopted this guidance on January 1, 2018 and recorded a $231,366 cumulative effect adjustment to reclassify the cumulative unrealized gain, net of tax effect, from its investment in Plumbline Life Sciences, Inc. ("PLS") from accumulated other comprehensive loss to accumulated deficit. After the adoption of ASU No. 2016-01, the Company recorded a gain on investment in affiliated entity related to PLS of $982,000 on the condensed consolidated statement of operations for the three months ended March 31, 2018.
The cumulative effect of the changes made to the Company's condensed consolidated balance sheet as of January 1, 2018 for the adoption of ASU No. 2016-01 are included in the table below:

Equity:	Balance at December 31, 2017	Adjustments due to ASU No. 2016-01	Balance at January 1, 2018
Accumulated deficit	$(523,356,317)	$231,366	$(523,124,951)
Accumulated other comprehensive loss	$(117,005)	$(231,366)	$(348,371)

ASU No. 2016-02. In February 2016, the FASB issued ASU No. 2016-02, Leases. Under the new guidance, lessees will be required to recognize the following for all leases (with the exception of short-term leases) at the commencement date: (a) a lease liability, which is a lessee’s obligation to make lease payments arising from a lease, measured on a discounted basis; and (b) a right-of-use asset, which is an asset that represents the lessee’s right to use, or control the use of, a specified asset for the lease term. The ASU will be effective for the Company beginning January 1, 2019, with early adoption permitted. The Company is currently evaluating the impact of the application of this accounting standard update on its financial statements and related disclosures. The Company currently has three operating leases for its office and laboratory spaces in San Diego, California and Plymouth Meeting, Pennsylvania that are expected to be impacted by the standard and result in the present value of the future lease payment presented as right-to-use assets with a corresponding lease liability at the date of adoption.

6. Revenue Recognition

On January 1, 2018, the Company adopted Topic 606 using the modified retrospective method. Results for reporting periods beginning after January 1, 2018 are presented under Topic 606, while prior period amounts are not adjusted and continue to be reported in accordance with the Company's historical accounting under Topic 605.

For additional details about Topic 606, refer to Note 3 above.

The following table summarizes changes in the Company's contract assets and liabilities for the three months ended March 31, 2018:

	Balance at January 1, 2018	Additions	Deductions	Balance at March 31, 2018
Contract assets				
Accounts receivable from MedImmune	$1,693,530	$1,339,961	$(3,750)	$3,029,741
Contract liabilities				
Deferred revenue - MedImmune	1,145,500	582,500	(531,583)	1,196,417
Deferred revenue - ApolloBio	—	23,000,000	—	23,000,000
Deferred revenue - Other	$271,894	$—	$(120,534)	$151,360

During the three months ended March 31, 2018, the Company recognized total revenue under collaborative research and development and other agreements of $1.3 million from Medimmune, $118,000 from its affiliated entity GeneOne Life Science Inc. ("GeneOne") and $123,000 from various other contracts. Of the total revenue recognized during the three months ended March 31, 2018, $652,000 was in deferred revenue as of December 31, 2017. All revenues recognized during the three months ended March 31, 2018 are attributed to the United States.

7. Investments

Investments at March 31, 2018 and December 31, 2017 consisted of mutual funds, United States corporate debt securities and an equity investment in the Company's affiliated entity PLS. Investments are recorded at fair value, based on current market valuations. After the adoption of ASU No. 2016-01 on January 1, 2018, unrealized gains and losses on the Company's equity securities are reported in the condensed consolidated statement of operations as non-operating other income (expense). Unrealized gains and losses on the Company's debt securities will continue to be excluded from earnings and are reported as a separate component of other comprehensive loss until realized. Realized gains and losses are included in non-operating other income (expense) on the condensed consolidated statement of operations and are derived using the specific identification method for determining the cost of the securities sold. During the three months ended March 31, 2018 and 2017, $253,000 and $52,000 of net realized loss on investments was recorded, respectively. The Company assessed each of its investments on an individual basis to determine if any decline in fair value was other-than-temporary. Interest and dividends on investments classified as available-for-sale are included in interest and other income, net, in the condensed consolidated statements of operations. As of March 31, 2018, the Company had 28 available-for-sale securities in a gross unrealized loss position, of which 3 with an aggregate total unrealized loss of $28,000 were in such position for longer than 12 months.

The following is a summary of available-for-sale securities as of March 31, 2018 and December 31, 2017:

		As of March 31, 2018			
	Contractual Maturity (in years)	Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Market Value
Mutual funds	---	$54,509,756	$ —	$ (306,308)	$ 54,203,448
US corporate debt securities	Less than 2	21,211,005	—	(154,564)	21,056,441
Investment in affiliated entity (PLS)	---	—	3,307,192	—	3,307,192
Total investments		$75,720,761	$ 3,307,192	$ (460,872)	$ 78,567,081
		As of December 31, 2017			
	Contractual Maturity (in years)	Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Market Value
Mutual funds	---	$68,776,165	$ 42,097	$ (252,373)	$ 68,565,889
US corporate debt securities	Less than 2	35,210,121	3,032	(140,198)	35,072,955
Investment in affiliated entity (PLS)	---	—	2,325,079	—	2,325,079
Total investments		$103,986,286	$ 2,370,208	$ (392,571)	$ 105,963,923

8. Marketable Securities and Fair Value Measurements

The guidance regarding fair value measurements establishes a three-tier fair value hierarchy, which prioritizes the inputs used in measuring fair value. These tiers include: Level 1, defined as observable inputs such as quoted prices in active markets that are accessible at the measurement date; Level 2, defined as inputs other than quoted prices in active markets that are either

directly or indirectly observable; and Level 3, defined as unobservable inputs in which little or no market data exists, therefore requiring an entity to develop its own assumptions.

Assets and liabilities are classified based on the lowest level of input that is significant to the fair value measurements. The Company reviews the fair value hierarchy classification on a quarterly basis. Changes in the ability to observe valuation inputs may result in a reclassification of levels for certain securities within the fair value hierarchy. The Company did not have any transfer of assets and liabilities between Level 1, Level 2 and Level 3 of the fair value hierarchy during the three months ended March 31, 2018 or 2017.

The following table presents the Company's assets and liabilities that are measured at fair value on a recurring basis, and are determined using the following inputs as of March 31, 2018:

	Fair Value Measurements at March 31, 2018			
	Total	Quoted Prices in Active Markets (Level 1)	Significant Other Unobservable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Assets:				
Money market funds	$1,590,607	$1,590,607	$—	$ —
Mutual funds	54,203,448	—	54,203,448	—
US corporate debt securities	21,056,441	—	21,056,441	—
Investment in affiliated entities	13,774,903	13,774,903	—	—
Total Assets	$90,625,399	$15,365,510	$75,259,889	$ —
Liabilities:				
Common stock warrants	$488,636	$—	$—	488,636
Total Liabilities	$488,636	$—	$—	$ 488,636

The following table presents the Company's assets and liabilities that are measured at fair value on a recurring basis, and are determined using the following inputs as of December 31, 2017:

	Fair Value Measurements at December 31, 2017			
	Total	Quoted Prices in Active Markets (Level 1)	Significant Other Unobservable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Assets:				
Money market funds	$9,843,482	$9,843,482	$—	$ —
Mutual funds	68,565,889	—	68,565,889	—
US corporate debt securities	35,072,955	—	35,072,955	—
Investment in affiliated entities	11,394,480	11,394,480	—	—
Total Assets	$124,876,806	$21,237,962	$103,638,844	$ —
Liabilities:				
Common stock warrants	$360,795	$—	$—	$ 360,795
Total Liabilities	$360,795	$—	$—	$ 360,795

Level 1 assets at March 31, 2018 consisted of money market funds held by the Company that are valued at quoted market prices, as well as the Company's investments in GeneOne and PLS. The Company accounts for its investment in 1,644,155 common shares of GeneOne based on the closing price of the shares on the Korean Stock Exchange on

the applicable balance sheet date. The Company accounts for its investment in 395,758 common shares of PLS as an equity investment with a fair value based on the closing price of the shares on the Korea New Exchange (KONEX) Market on the applicable balance sheet date. The Company elected the fair value option in conjunction with the investment in GeneOne at the inception of the investment; therefore, changes in the fair value of the investment are reflected as other income (expense) in the condensed consolidated statements of operations. The Company did not elect the fair value option for the investment in PLS at the

inception of the investment, but rather recorded the investment under the equity method until its ownership interest dropped below 20% in June 2015 and, accordingly, began recording the investment under the cost method using the carryover basis from the equity method of zero. Once shares of PLS began trading on the KONEX, the Company classified the investment as available-for-sale and began recording the investment at fair value. After the adoption of ASU No. 2016-01 on January 1, 2018, unrealized gains and losses on the Company's equity securities are reported in the condensed consolidated statement of operations as a gain (loss) on investment in affiliated entities, as discussed in Note 5.

Level 2 assets at March 31, 2018 consisted of US corporate debt securities and mutual funds held by the Company that are initially valued at the transaction price and subsequently valued, at the end of each reporting period, typically utilizing market observable data. The Company obtains the fair value of its Level 2 assets from a professional pricing service, which may use quoted market prices for identical or comparable instruments, or inputs other than quoted prices that are observable either directly or indirectly. The professional pricing service gathers quoted market prices and observable inputs from a variety of industry data providers. The valuation techniques used to measure the fair value of the Company's Level 2 financial instruments were derived from non-binding market consensus prices that are corroborated by observable market data, quoted market prices for similar instruments, or pricing models such as discounted cash flow techniques. The Company validates the quoted market prices provided by the primary pricing service by comparing the service's assessment of the fair values of the Company's investment portfolio balance against the fair values of the Company's investment portfolio balance obtained from an independent source.

There were no Level 3 assets held as of March 31, 2018.

Level 3 liabilities at March 31, 2018 consisted of common stock warrant liabilities associated with warrants to purchase the Company's common stock issued in March 2013. If unexercised, the warrants will expire in September 2018. During the three months ended March 31, 2018 and 2017, none of these warrants were exercised.

As of March 31, 2018, the Company had a $489,000 common stock warrant liability. The Company reassesses the fair value of the common stock warrants at each reporting date utilizing a Black-Scholes pricing model. Inputs used in the pricing model include estimates of stock price volatility, expected warrant life and risk-free interest rate. The Company develops its estimates based on historical data. The assumptions used to estimate the fair value of common stock warrants at March 31, 2018 are presented below:

Risk-free interest rate	1.93%
Expected volatility	65%
Expected life in years	0.45
Dividend yield	—

Changes in these assumptions as well as fluctuations in the Company's stock price on the valuation date can have a significant impact on the fair value of the common stock warrant liability. As a result of these calculations, the Company recorded an increase (decrease) in fair value of $128,000 and $(116,000) for the three months ended March 31, 2018 and 2017, respectively. The change in fair value of common stock warrants is reflected in the Company's condensed consolidated statements of operations.

The following table presents the changes in fair value of the Company’s Level 3 financial liabilities for the three months ended March 31, 2018:

Balance at December 31, 2017	$360,795
Increase attributable to change in fair value of common stock warrants	127,841
Balance at March 31, 2018	$488,636

9. Goodwill and Intangible Assets

The following sets forth the goodwill and intangible assets by major asset class:

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		March 31, 2018			December 31, 2017		
	Useful Life (Yrs)	Gross	Accumulated Amortization	Net Book Value	Gross	Accumulated Amortization	Net Book Value
Indefinite lived:							
Goodwill(a)		$10,513,371	$—	$10,513,371	$10,513,371	$—	$10,513,371
Definite lived:							
Patents	8 – 17	5,802,528	(5,696,775)	105,753	5,802,528	(5,681,673)	120,855
Licenses	8 – 17	1,323,761	(1,197,796)	125,965	1,323,761	(1,190,609)	133,152
CELLECTRA®(b)	5 – 11	8,106,270	(7,358,878)	747,392	8,106,270	(7,252,108)	854,162
GHRH(b)	11	335,314	(279,868)	55,446	335,314	(271,948)	63,366
Bioject(c)	2 – 15	5,100,000	(1,616,389)	3,483,611	5,100,000	(1,405,556)	3,694,444
Other(d)	18	4,050,000	(2,962,500)	1,087,500	4,050,000	(2,906,250)	1,143,750
Total intangible assets		24,717,873	(19,112,206)	5,605,667	24,717,873	(18,708,144)	6,009,729
Total goodwill and intangible assets		$35,231,244	$(19,112,206)	$16,119,038	$35,231,244	$(18,708,144)	$16,523,100

(a) Goodwill was recorded from the Inovio AS acquisition in January 2005, the acquisition of VGX in June 2009 and the acquisition of Bioject in April 2016 for $3.9 million, $6.2 million and $400,000, respectively.

(b) CELLECTRA® and GHRH are developed technologies which were recorded from the acquisition of VGX.

(c) Bioject intangible assets represent the estimated fair value of developed technology and intellectual property which were recorded from the Bioject asset acquisition.

(d) Other intangible assets represent the estimated fair value of acquired intellectual property from the Inovio AS acquisition.

Aggregate amortization expense on intangible assets for the three months ended March 31, 2018 and 2017 was $404,000 and $406,000, respectively. Estimated aggregate amortization expense for each of the five succeeding fiscal years is $846,000 for the remainder of fiscal year 2018, $1.1 million for 2019, $547,000 for 2020, $520,000 for 2021, $493,000 for 2022 and $2.1 million for 2023 and subsequent years combined.

10. Stockholders’ Equity

The following is a summary of the Company's authorized and issued common and preferred stock as of March 31, 2018 and December 31, 2017:

			Outstanding as of	
	Authorized	Issued	March 31, 2018	December 31, 2017
Common Stock, par value $0.001 per share	600,000,000	90,704,931	90,704,931	90,357,644
Series C Preferred Stock, par value $0.001 per share	1,091	1,091	23	23

Common Stock

On July 25, 2017, the Company closed an underwritten public offering of 12,500,000 shares of common stock at a public offering price of $6.00 per share. The net proceeds to the Company, after deducting the underwriters' discounts and commissions and other offering expenses, were $70.1 million.

In June 2016, the Company entered into an At-the-Market Equity Offering Sales Agreement (the “Sales Agreement”) with an outside placement agent (the “Placement Agent”) to sell shares of its common stock with aggregate gross proceeds of up to $50.0 million, from time to time, through an “at-the-market” equity offering program under which the Placement Agent will act as sales agent. Under the Sales Agreement, the Company will set the parameters for the sale of shares, including the number of shares to be issued, the time period during which sales are requested to be made, limitation on the number of shares that may be sold in any one trading day and any minimum price below which sales may not be made. The Sales Agreement provides that the Placement Agent will be entitled to compensation for its services in an amount equal to 2.0% of the gross proceeds from the sales of shares sold through the Placement Agent under the Sales Agreement. The Company has no

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obligation to sell any shares under the Sales Agreement, and may at any time suspend solicitation and offers under the Sales Agreement.

There were no sales of common stock under the Sales Agreement during the three months ended March 31, 2018. As of March 31, 2018, the Company has sold an aggregate of 3,596,154 shares of common stock under the Sales Agreement for net proceeds of $30.5 million. Accordingly, the Company may sell up to an additional $18.9 million in shares of its common stock under the Sales Agreement. The registration statement that registered with the SEC the shares that may be sold under the Sales Agreement expires on June 5, 2018.

Warrants

The Company accounts for registered common stock warrants issued in March 2013 under the authoritative guidance on accounting for derivative financial instruments indexed to, and potentially settled in, a company's own stock, on the understanding that in compliance with applicable securities laws, the registered warrants require the issuance of registered securities upon exercise and do not sufficiently preclude an implied right to net cash settlement. The Company classifies registered warrants on the condensed consolidated balance sheet as a current liability which is revalued at each balance sheet date subsequent to the initial issuance. Determining the appropriate fair-value model and calculating the fair value of registered warrants requires considerable judgment, including estimating stock price volatility and expected warrant life. The Company uses the Black-Scholes pricing model to value the registered warrants. The Company develops its estimates based on historical data. A small change in the estimates used may have a relatively large change in the estimated valuation. Changes in the fair market value of the warrants are reflected in the condensed consolidated statement of operations as change in fair value of common stock warrants.

The following table summarizes the warrants outstanding as of March 31, 2018 and December 31, 2017:

Issued in Connection With:	Exercise Price	Expiration Date	As of March 31, 2018 Number of Warrants Outstanding	Common Stock Warrant Liability	As of December 31, 2017 Number of Warrants Outstanding	Common Stock Warrant Liability
March 2013 financing	$ 3.17	September 12, 2018	284,091	$ 488,636	284,091	$ 360,795
Total			284,091	$ 488,636	284,091	$ 360,795

Stock Options

The Company has a stock-based incentive plan, the 2016 Omnibus Incentive Plan (the "2016 Incentive Plan"), pursuant to which the Company may grant stock options, restricted stock awards, restricted stock units and other stock-based awards or short-term cash incentive awards to employees, directors and consultants.

The 2016 Incentive Plan was approved by the Company's stockholders on May 13, 2016. The maximum number of shares of the Company's common stock available for issuance over the term of the 2016 Incentive Plan may not exceed 6,000,000 shares, provided that commencing with the first business day of each calendar year beginning January 1, 2018, such maximum number of shares shall be increased by 2,000,000 shares of common stock unless the Board determines, prior to January 1 for any such calendar year, to increase such maximum amount by a fewer number of shares or not to increase the maximum amount at all for such year. On January 1, 2018, the maximum number of shares to be issued was increased by 2,000,000. At March 31, 2018, there were 8,000,000 shares of common stock reserved for issuance upon exercise of incentive awards granted and to be granted at future dates under the 2016 Incentive Plan. At March 31, 2018, the Company had 3,044,097 shares of common stock available for future grant under the 2016 Incentive Plan, 1,576,224 shares underlying outstanding but unvested restricted stock units and options outstanding to purchase 3,078,555 shares of common stock under the 2016 Incentive Plan. The awards granted and available for future grant under the 2016 Incentive Plan generally vest over three years and have a maximum contractual term of ten years. The 2016 Incentive Plan terminates by its terms on March 9, 2026.

The Amended and Restated 2007 Omnibus Incentive Plan (the "2007 Incentive Plan") was adopted on March 31, 2007 and terminated by its terms on March 31, 2017. At March 31, 2018, the Company had 215,662 shares underlying outstanding but unvested restricted stock units and options outstanding to purchase 6,197,484 shares of common stock under the 2007 Incentive Plan. The awards granted under the 2007 Incentive Plan generally vest over three years and have a maximum contractual term of ten years.

At March 31, 2018, the Company had options outstanding to purchase 191,438 shares of common stock under the VGX Equity Compensation Plan. The options under this plan were assumed in connection with the acquisition of VGX. The terms and conditions of the options outstanding under this plan remain unchanged.

11. Net Loss Per Share

Basic net loss per share is computed by dividing the net loss for the year by the weighted average number of common shares outstanding during the year. Diluted net loss per share is calculated in accordance with the treasury stock method and reflects the potential dilution that would occur if securities or other contracts to issue common stock were exercised or converted to common stock. The calculation of diluted net loss per share requires that, to the extent the average market price of the underlying shares for the reporting period exceeds the exercise price of the options, warrants or other securities and the presumed exercise of such securities are dilutive to net loss per share for the period, an adjustment to net loss used in the calculation is required to remove the change in fair value of such securities from the numerator for the period. Likewise, an adjustment to the denominator is required to reflect the related dilutive shares, if any, under the treasury stock method.

The following tables reconcile the components of the numerator and denominator included in the calculations of diluted net loss per share:

	Three Months Ended March 31,	
	2018	2017
Numerator		
Net loss	$(32,350,828)	$(23,085,907)
Adjustment for decrease in fair value of warrant liability	—	(116,477)
Numerator for use in diluted net loss per share	$(32,350,828)	$(23,202,384)
Denominator		
Weighted average number of common shares outstanding	90,451,791	74,152,609
Effect of dilutive potential common shares	—	148,275
Denominator for use in diluted net loss per share	90,451,791	74,300,884
Net loss per share, diluted	$(0.36)	$(0.31)

The following table summarizes potential shares of common stock that were excluded from the diluted net loss per share calculation because of their anti-dilutive effect for the three months ended March 31, 2018 and 2017:

Common Stock Equivalents	2018	2017
Options to purchase common stock	9,467,477	7,841,669
Warrants to purchase common stock	284,091	—
Restricted stock units	1,791,886	1,376,893
Convertible preferred stock	8,456	8,456
Total	11,551,910	9,227,018

12. Stock-Based Compensation

The Company incurs stock-based compensation expense related to restricted stock units and stock options. The fair value of restricted stock is determined by the closing price of the Company's common stock reported on the Nasdaq Global Select Market on the date of grant. The Company estimates the fair value of stock options granted using the Black-Scholes option pricing model. The Black-Scholes option pricing model was developed for use in estimating the fair value of traded options, which have no vesting restrictions and are fully transferable. In addition, option valuation models require the input of highly subjective assumptions, including the expected stock price volatility and expected option life. The Company amortizes the fair value of the awards on a straight-line basis over the requisite vesting period of the awards. Expected volatility is based on historical volatility. The expected life of options granted is based on historical expected life. The risk-free interest rate is based on the U.S. Treasury yield in effect at the time of grant. The dividend yield is based on the fact that no dividends have been paid historically and none are currently expected to be paid in the foreseeable future. Upon adoption of ASU 2016-09 on January 1, 2017, the Company elected to remove the forfeiture rate from the calculation and recorded a cumulative catch-up adjustment to accumulated deficit

with a corresponding offset to additional paid-in-capital of $312,000. Previously, the

forfeiture rate was based on historical data and the Company recorded stock-based compensation expense only for those awards that were expected to vest.

The weighted average assumptions used in the Black-Scholes model for option grants to employees and directors are presented below:

	Three Months Ended March 31,	
	2018	2017
Risk-free interest rate	2.72%	2.24%
Expected volatility	72%	73%
Expected life in years	6.2	6.0
Dividend yield	—	—

Total employee and director stock-based compensation expense recognized in the condensed consolidated statements of operations for the three months ended March 31, 2018 and 2017 was $3.4 million and $5.2 million, respectively, of which $2.1 million and $2.2 million were included in research and development expenses, respectively, and $1.3 million and $3.0 million were included in general and administrative expenses, respectively.

At March 31, 2018, there was $8.7 million of total unrecognized compensation expense related to unvested stock options, which is expected to be recognized over a weighted-average period of 2.2 years.

The weighted average grant date fair value per share, calculated using the Black-Scholes option pricing model, was $2.84 and $4.38 for employee and director stock options granted during the three months ended March 31, 2018 and 2017, respectively.

At March 31, 2018, there was $4.4 million of total unrecognized compensation expense related to unvested restricted stock units, which is expected to be recognized over a weighted-average period of 1.7 years.

The weighted average grant date fair value per share was $4.29 and $6.68 for restricted stock units granted during the three months ended March 31, 2018 and 2017, respectively.

The fair value of options granted to non-employees at the measurement dates were estimated using the Black-Scholes pricing model. Total stock-based compensation expense for options and restricted stock units granted to non-employees for the three months ended March 31, 2018 and 2017 was $140,000 and $131,000, respectively.

13. Related Party Transactions

GeneOne Life Sciences

The Company owns 1,644,155 shares of common stock in GeneOne as of March 31, 2018; one of the Company's directors, Dr. David B. Weiner, acts as a consultant to GeneOne.

In 2010, the Company entered into a collaboration and license agreement (the “GeneOne Agreement”) with GeneOne. Under the GeneOne Agreement, the Company granted GeneOne an exclusive license to the Company's SynCon® universal influenza vaccine delivered with electroporation to be developed in certain countries in Asia (the “Product”). As consideration for the license granted to GeneOne, the Company received an upfront payment of $3.0 million, and is entitled to receive research support, annual license maintenance fees and royalties on net Product sales. The GeneOne Agreement also provides the Company with exclusive rights to supply devices for clinical and commercial purposes (including single use components) to GeneOne for use in the Product. The term of the GeneOne Agreement commenced upon execution and will extend on a country by country basis until the last to expire of all Royalty Periods for the territory (as such term is defined in the GeneOne Agreement) for any Product in that country, unless the GeneOne Agreement is terminated earlier in accordance with its provisions as a result of breach, by mutual agreement, or by GeneOne's right to terminate without cause upon prior written notice.

In 2011, the Company entered into a collaborative development and license agreement (the “Hep Agreement”) with GeneOne. Under the Hep Agreement, as originally executed, the Company and GeneOne agreed to co-develop the Company’s SynCon® therapeutic vaccines for hepatitis B and C infections (the “Hep Products”). Under the terms of the Hep Agreement, GeneOne will receive marketing rights for the Products in Asia, excluding Japan, and in return will fully fund IND-enabling and initial Phase 1 and 2 clinical studies with respect to the Hep Products. The Company will

receive from GeneOne payments based on the achievement of clinical milestones and royalties based on sales of the Hep Products in the licensed territories, retaining all commercial rights to the Hep Products in all other territories. In 2013, the Company amended the Hep Agreement to grant back to the Company the SynCon® therapeutic vaccines targeting hepatitis B, along with all associated rights, from the

collaboration in return for certain remuneration including a percentage of license fees. In 2013, the Company further amended the Hep Agreement to in part provide exclusive patent rights to IL-28 technology for use with the Hep Products in Asia, excluding Japan. The Hep Agreement shall terminate upon the later of the expiration or abandonment of the last patent that is a component of the rights or 20 years after the effective date.

In May 2015, the Company entered into a Collaborative Development Agreement with GeneOne to co-develop a DNA vaccine for MERS through Phase 1 clinical trials. Under the terms of the agreement, GeneOne will be responsible for funding all preclinical and clinical studies through Phase 1. In return, GeneOne will receive up to a 35% milestone-based ownership interest in the MERS immunotherapy upon achievement of the last milestone event of completion of the Phase 1 safety and immunogenicity study. The collaborative research program shall terminate upon the completion of activities under the development plan, unless sooner terminated.

In January 2016, the Company and GeneOne amended the Collaborative Development Agreement for MERS to expand the agreement to test and advance the Company's DNA-based vaccine for preventing and treating Zika virus. GeneOne will be responsible for funding all preclinical and clinical studies through Phase 1. In return, GeneOne will receive up to a 35% milestone-based ownership interest in the Zika immunotherapy upon achievement of the last milestone event of the completion of the Phase 1 safety and immunogenicity study. All other agreement terms remain the same.

In December 2017, the Company completed the sale of certain assets related to its compound VGX-1027 to GeneOne for a purchase price of $1.0 million.

Revenue recognized from GeneOne consisted of licensing and other fees from the influenza and Zika collaborations. For the three months ended March 31, 2018 and 2017, the Company recognized revenue from GeneOne of $118,000 and $167,000, respectively.

Operating expenses recorded from transactions with GeneOne relate primarily to biologics manufacturing. Operating expenses from GeneOne for the three months ended March 31, 2018 and 2017 were $1.7 million and $428,000, respectively.

At March 31, 2018 and December 31, 2017, the Company had an accounts payable and accrued liability balance of $710,000 and $107,000, respectively, related to GeneOne and its subsidiaries. At March 31, 2018 and December 31, 2017, $347,000 and $331,000, respectively, of prepayments made to GeneOne were classified as long-term other assets on the Company's condensed consolidated balance sheet.

Plumbline Life Sciences, Inc.

The Company owns 395,758 shares of common stock in Plumbline Life Sciences, Inc. ("PLS") as of March 31, 2018; one of the Company's directors, Dr. David B. Weiner, acts as a consultant to PLS.

In August 2016, the Company licensed a veterinary vaccine for foot and mouth disease ("FMD") to PLS. PLS will fund all development activities for this FMD vaccine. The Company will receive milestone payments as well as royalties on product sales from PLS for commercial rights to this FMD synthetic vaccine in Asia, excluding Japan. For the three months ended March 31, 2018 and 2017, the Company recognized revenue from PLS of $30,000 and $67,000, respectively. At March 31, 2018 and December 31, 2017, the Company had an accounts receivable balance of $400,000 and $370,000, respectively, related to PLS.

The Wistar Institute

One of the Company's directors, Dr. David B. Weiner, is the Executive Vice President and Director of the Vaccine Center of The Wistar Institute ("Wistar").

In March 2016, the Company entered into collaborative research agreements with Wistar for preventive and therapeutic DNA-based immunotherapy applications and products developed by Dr. Weiner and Wistar for the treatment of cancers and infectious diseases. Under the terms of the agreement, the Company will reimburse Wistar for all direct and indirect costs incurred in the conduct of the collaborative research, not to exceed $3.1 million during the five-year term of the agreement. The Company will have the exclusive right to in-license new intellectual property developed under the agreement.

In December 2016, the Company received a $6.1 million sub-grant through Wistar to develop a DNA-based monoclonal antibody against the Zika infection.

The Company is also a collaborator with Wistar on an Integrated Preclinical/Clinical AIDS Vaccine Development (IPCAVD) grant from the National Institute of Allergy and Infectious Diseases (NIAID), awarded in 2015.

Deferred grant funding recognized from Wistar and recorded as contra-research and development expense, which would have been classified as grant revenue in the prior year, is related to work performed by the Company on the research sub-contract agreements. For the three months ended March 31, 2018 the Company recorded $1.8 million as contra-research and development expense from Wistar. For the three months ended March 31, 2017, the Company recognized revenue from Wistar of $614,000.

Research and development expenses recorded from Wistar relate primarily to the collaborative research agreements and sub-contract agreements related to the DARPA Ebola grant (see Note 15). Research and development expenses recorded from Wistar for the three months ended March 31, 2018 and 2017 were $402,000 and $543,000, respectively.

At March 31, 2018 and December 31, 2017, the Company had an accounts receivable balance of $1.8 million and $117,000, respectively, and an accounts payable and accrued liability balance of $589,000 and $820,000, respectively, related to Wistar.

14. Commitments and Contingencies

San Diego Leases

In April 2013, the Company entered into a lease for office space located in San Diego, California (the "San Diego Lease"). The term of the San Diego Lease commenced on December 1, 2013. The initial term of the San Diego Lease is ten years, with a right to terminate on December 1, 2019, subject to specified conditions. In June 2015, the Company amended the San Diego Lease to increase the total leased space and occupy the entire building. The commencement of the amended San Diego Lease was in January 2016 and increased monthly lease payments to range from zero to $99,000. The Company has capitalized $3.4 million of total tenant improvements within fixed assets on the condensed consolidated balance sheet related to the entire building and has recorded a corresponding increase to deferred rent.

In October 2016, the Company entered into an office lease (the “new Lease”) for a second property located in San Diego, California. The total space under the new Lease is approximately 51,000 square feet. The Company is using the facility for office, manufacturing and research and development purposes. The term of the new Lease commenced on June 1, 2017. The initial term of the new Lease is ten years, with a right to terminate on November 30, 2023, subject to specified conditions.

The base rent adjusts periodically throughout the term of the new Lease, with monthly payments ranging from zero to $95,000, with a portion of the rent abated for certain periods during the first two years of the initial term. In addition, the Company is obligated to reimburse the landlord its share of operating and other expenses, and has paid a security deposit of $95,000. As of March 31, 2018, the Company has capitalized $2.3 million of reimbursable tenant improvements to the new office which has been recorded as a leasehold improvement within fixed assets on the condensed consolidated balance sheet, offset by a corresponding amount recorded in deferred rent.

Plymouth Meeting Lease

In March 2014, the Company entered into a lease (the "Lease") for office space located in Plymouth Meeting, Pennsylvania. The Company occupied the space in June 2014. The initial term of the Lease is 11.5 years.

The base rent adjusts periodically throughout the term of the Lease, with monthly payments ranging from zero to $58,000. In addition, the Company is obligated to reimburse the landlord its share of operating and other expenses and a property management fee, and has paid a security deposit of $49,000. In July 2015 and June 2016, the Company amended the Lease to increase the total leased space. The commencement of the amended Lease in July 2015 was in the first quarter of 2016 and increased monthly lease payments to range from zero to $80,000. The commencement of the amended lease in June 2016 was October 1, 2017 and increased monthly lease payments to range from $75,000 to $90,000.

In June 2017, the Company entered into another amendment to the Lease to extend the lease term through December 31, 2029. In connection with this amendment, the Company paid the landlord an additional security deposit of $75,000. Total monthly rent payments for the additional term will range between $173,000 and $179,000. The future monthly lease payments for all the Plymouth Meeting office space will range from zero to $179,000. The Company has capitalized $2.6 million of tenant improvements to the Plymouth Meeting office within fixed assets on the

condensed consolidated balance sheet, offset by a corresponding amount recorded in deferred rent.

The Company's future minimum lease payments under all non-cancelable operating leases as of March 31, 2018 are as follows:

Remainder of 2018	$2,447,000
2019	3,756,000
2020	3,891,000
2021	3,979,000
2022	4,052,000
Thereafter	19,975,000
Total	$38,100,000

In the normal course of business, the Company is a party to a variety of agreements pursuant to which it may be obligated to indemnify the other party. It is not possible to predict the maximum potential amount of future payments under these types of agreements due to the conditional nature of our obligations and the unique facts and circumstances involved in each particular agreement. Historically, payments made by us under these types of agreements have not had a material effect on the Company's business, consolidated results of operations or financial condition.

15. Collaborative Agreements

ApolloBio Corporation

On December 29, 2017, the Company entered into an Amended and Restated License and Collaboration Agreement (the "ApolloBio Agreement"), with ApolloBio Corporation ("ApolloBio"), with an effective date of March 20, 2018. Under the terms of the ApolloBio Agreement, the Company has granted to ApolloBio the exclusive right to develop and commercialize VGX-3100, its DNA immunotherapy product designed to treat pre-cancers caused by HPV, within the territories of China, Hong Kong, Macao, Taiwan, and may include Korea in the event that no patent covering VGX-3100 is issued in China within the three years following the effective date of the ApolloBio Agreement.

Under the ApolloBio Agreement, the Company received proceeds of $19.4 million in March 2018 which comprised the up-front payment of $23.0 million less $2.2 million in foreign income taxes and $1.4 million in certain foreign non-income taxes. The foreign income taxes were recorded as a provision for income taxes and the foreign non-income taxes were recorded as a general and administrative expense, on the condensed consolidated statement of operations for the three months ended March 31, 2018. The Company also incurred advisory fees of $960,000 in connection with receiving the up-front payment from ApolloBio. These fees were determined to be incremental costs of obtaining the contract. The Company applied the practical expedient that permits a company to expense incremental costs to obtain a contract when the expected amortization period is one year or less and recorded the fees in general and administrative expense for the three months ended March 31, 2018. No additional advisory fees are due related to the ApolloBio Agreement.

In addition to the upfront payment, the Company is entitled to receive up to an aggregate of $20.0 million, less required income, withholding or other taxes, upon the achievement of specified milestones related to the regulatory approval of VGX-3100 in the United States, China and Korea. In the event that VGX-3100 is approved for marketing, the Company will be entitled to receive royalty payments based on a tiered percentage of annual net sales, with such percentage being in the low- to mid-teens, subject to reduction in the event of generic competition in a particular territory. ApolloBio’s obligation to pay royalties will continue for 10 years after the first commercial sale in a particular territory or, if later, until the expiration of the last-to-expire patent covering the licensed products in the specified territory.

The ApolloBio Agreement will continue in force until ApolloBio has no remaining royalty obligations. Either party may terminate the ApolloBio Agreement in the event the other party shall materially breach or default in the performance of its material obligations thereunder and such default continues for a specified period after written notice thereof. In addition, ApolloBio may terminate the ApolloBio Agreement at any time beginning one year after the effective date for any reason upon 90 days written notice to the Company

The Company identified the promised goods or services at the effective date of the ApolloBio agreement and determined that the license to VGX-3100 in the territories represents a distinct performance obligation on a standalone

basis. The Company has determined that as of March 31, 2018, the performance obligation had not been satisfied, as the transfer of technology had not occurred. The Company has recorded the gross up-front payment received from ApolloBio of $23.0 million on the condensed consolidated balance sheet as deferred revenue as of March 31, 2018.

MedImmune

On August 7, 2015, the Company entered into a license and collaboration agreement with MedImmune, the global biologics research and development arm of AstraZeneca. Under the agreement, MedImmune acquired exclusive rights to the Company's INO-3112 immunotherapy, renamed as MEDI0457, which targets cancers caused by human papillomavirus (HPV)

types 16 and 18 with the ability to sublicense those license rights. MedImmune made an upfront payment of $27.5 million to the Company in September 2015 and has agreed to make potential future development and regulatory event-based payments totaling up to $355 million and potential future commercial event-based payments totaling up to $345 million, in each case upon the achievement of specified milestones set forth in the license and collaboration agreement. MedImmune will fund all development costs associated with INO-3112 immunotherapy. The Company is entitled to receive up to mid-single to double-digit tiered royalties on INO-3112 product sales. Within the broader collaboration, at MedImmune's discretion, MedImmune and the Company will develop up to two additional DNA-based cancer vaccine products not included in the Company's current product pipeline, which MedImmune will have the exclusive rights to develop and commercialize. These additional development services would be provided by the Company at an industry standard full-time-equivalent rate. Under the agreement, MedImmune can also request the Company to provide certain clinical manufacturing at an agreed upon price. The Company determined these options did not represent material rights at the inception of the agreement.

As of December 31, 2017, the Company has recognized all of the $27.5 million upfront payment as revenue, as all identified material performance obligations have been met with respect to that payment. In December 2017, the Company received and recognized as revenue a $7.0 million milestone payment from MedImmune triggered by MedImmune's initiation of the Phase 2 portion of an ongoing clinical trial under the agreement. During the three months ended March 31, 2018 the Company recognized revenues of $1.3 million from MedImmune primarily for manufacturing services. As of March 31, 2018, the Company had deferred revenue and accounts receivable related to MedImmune of $1.2 million and $3.0 million, respectively. The deferred revenue relates to advanced payments made by the Company to a third party biologics manufacturer for which MedImmune is obligated to pay.

Prior to January 1, 2018 the Company accounted for the arrangement under Topic 605, which resulted in revenue of $306,000 from MedImmune for the three months ended March 31, 2017.

Roche

In September 2013, the Company entered into a Collaborative, License, and Option Agreement with F. Hoffmann-La Roche Ltd. and Hoffmann-La Roche Inc. (together, "Roche") and received an upfront payment of $10.0 million. The parties agreed to co-develop multi-antigen DNA immunotherapies targeting prostate cancer and hepatitis B.

On November 14, 2014, Roche provided notice to the Company that it would be partially terminating the agreement with respect to the development of the Company's DNA immunotherapy targeting prostate cancer. The termination was effective in February 2015. All of Roche's rights to the Company's DNA immunotherapy targeting prostate cancer, including the right to license the product to other parties, have been returned to the Company.

On July 28, 2016, Roche provided notice to the Company that it would be discontinuing the agreement and its development of INO-1800, the Company's DNA immunotherapy against the hepatitis B virus. The termination was effective in October 2016. All of Roche's rights to INO-1800, including the right to license the product to other parties, have been returned to the Company. In February 2017, the Company received full payment of $8.5 million from Roche for its past and future obligations which were completed during the quarter ended June 30, 2017, associated with the termination of the agreement. During the three months ended March 31, 2018 and 2017, the Company recognized revenues of $0 and $4.0 million from Roche, respectively.

DARPA- Ebola

In April 2015, the Company received a grant from the Defense Advanced Research Projects Agency ("DARPA") to lead a collaborative team to develop multiple treatment and prevention approaches against Ebola. The consortium, led by the Company, is taking a multi-faceted approach to develop products to prevent and treat Ebola infection. The award covers pre-clinical development costs as well as good manufacturing practice, manufacturing costs and the Phase 1 clinical study costs. The funding period is over two years and covers a base award of $19.6 million and an option award of $24.6 million, which was exercised in September 2015. The development proposal includes a second option of $11.1 million to support additional product supply and clinical development activities. The options are contingent upon the successful completion of certain pre-clinical development milestones. During the three months ending March 31, 2018, the Company received funding of $376,000 related to the DARPA grant and recorded it as contra-research and development expense. During the three months ending March 31, 2017, the Company recognized revenues of $5.0 million from DARPA related to the grant. As of March 31, 2018, the Company had a deferred grant funding and grant receivable balance of $111,000 and $2.0 million, respectively, related to the DARPA grant.

16. Subsequent Events

On April 11, 2018, the Company announced that it has entered into agreements with the Coalition for Epidemic Preparedness Innovations ("CEPI"), pursuant to which the Company intends to develop vaccine candidates against Lassa fever and MERS. The goal of the collaboration between the Company and CEPI is to unlock research and development potential so

that investigational stockpiles will be ready for clinical efficacy trial testing during potential disease outbreaks. The agreements with CEPI contemplate preclinical studies, as well as Phase 1 and Phase 2 clinical trials, occurring over the next few years. As part of the arrangement between the parties, CEPI has agreed to fund up to an aggregate of $56 million of costs over a five-year period for preclinical studies, as well as planned Phase 1 and Phase 2 clinical trials, to be conducted by the Company and collaborators, with funding from CEPI based on the achievement of identified milestones. The Company's vaccine candidate for Lassa fever will be known as INO-4500 and its vaccine candidate for MERS will be known as INO-4700.

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

This Quarterly Report contains forward-looking statements, as defined in Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended. These statements relate to future events or our future financial performance. In some cases, you can identify forward-looking statements by terminology such as "may," "will," "should," "expect," "plan," "anticipate," "believe," "estimate," "predict," "potential" or "co negative of such terms or other comparable terminology. These statements are only predictions. Actual events or results may differ materially.

Although we believe that the expectations reflected in the forward-looking statements are reasonable based on our current expectations and projections, we cannot guarantee future results, levels of activity, performance or achievements. Moreover, neither we, nor any other person, assume responsibility for the accuracy and completeness of the forward-looking statements. We disclaim any obligation, except as specifically required by law and the rules of the SEC, to publicly update or revise any of the forward-looking statements after the filing of this Quarterly Report to conform such statements to actual results or to changes in our expectations. Statements made herein are as of the date of the filing of this Quarterly Report with the SEC and should not be relied upon as of any subsequent date. We caution readers not to place undue reliance on any forward-looking statements made by us, which speak only as of the date they are made.

The following discussion of our financial condition and results of operations should be read in conjunction with our condensed consolidated financial statements and the related notes and other financial information appearing elsewhere in this Quarterly Report and our audited consolidated financial statements and related notes for the year ended December 31, 2017 included in our Annual Report on Form 10-K filed with the SEC on March 14, 2018 (our "2017 Annual Report"). Readers are also urged to carefully review and consider the various disclosures made by us that attempt to advise interested parties of the factors that affect our business, including without limitation the disclosures made in Item 1A of Part II of this Quarterly Report under the captions "Risk Factors" and "Management's Discussion and Analysis of Financial Condition and Results of Operations," and the disclosures made in our 2017 Annual Report under the caption "Risk Factors" and in our audited consolidated financial statements and related notes.

Risk factors that could cause actual results to differ from those contained in the forward-looking statements include but are not limited to: our history of losses; our lack of products that have received regulatory approval; uncertainties inherent in clinical trials and product development programs, including but not limited to the fact that preclinical and clinical results may not be indicative of results achievable in other trials or for other indications, that the studies or trials may not be successful or achieve desired results, that preclinical studies and clinical trials may not commence, have sufficient enrollment or be completed in the time periods anticipated, that results from one study may not necessarily be reflected or supported by the results of other similar studies, that results from an animal study may not be indicative of results achievable in human studies, that clinical testing is expensive and can take many years to complete, that the outcome of any clinical trial is uncertain and failure can occur at any time during the clinical trial process, and that our electroporation technology and DNA vaccines may fail to show the desired safety and efficacy traits in clinical trials; the availability of funding; the ability to manufacture vaccine candidates; the availability or potential availability of alternative therapies or treatments for the conditions targeted by us or our collaborators, including alternatives that may be more efficacious or cost-effective than any therapy or treatment that we and our collaborators hope to develop; our ability to receive development, regulatory and commercialization event-based payments under our collaborative agreements; whether our proprietary rights are enforceable or defensible or infringe or allegedly infringe on rights of others or can withstand claims of invalidity; and the impact of government healthcare proposals.

General

We are developing active DNA immunotherapies and vaccines focused on treating and preventing cancers and infectious diseases. Our DNA-based immunotherapies, in combination with our proprietary electroporation delivery devices, are intended to generate robust immune responses, in particular T cells, to fight target diseases. In September 2015, data was published in the medical journal The Lancet from a controlled Phase 2 clinical trial in which we

generated significant, functional antigen-specific T cells that correlated to clinically relevant efficacy against HPV-associated cervical dysplasia (precancer). In June 2017, we began a Phase 3 clinical trial of our product candidate VGX-3100 for the treatment of HPV-caused cervical dysplasia. The Phase 3 trial for VGX-3100, which includes REVEAL 1, its primary study, and REVEAL 2, its confirmatory study, remains open and we are actively recruiting patients for REVEAL 1. A total of 60 sites globally are open to date and recruiting for REVEAL 1. We are also recruiting patients in a Phase 2 clinical trial of VGX-3100 for patients with vulvar dysplasia, or VIN, and associated diseases.

Our novel SynCon® immunotherapy design has shown the ability to help break the immune system's tolerance of cancerous cells. Our SynCon® product design approach is also intended to facilitate cross-strain protection against known and

new unmatched strains of pathogens, such as influenza. Given the recognized role of CD8+ killer T cells in eliminating cancerous or infected cells from the body and the published results from our Phase 2 clinical trial, we believe that our active immunotherapies may play an important role in helping fight multiple cancers and infectious diseases. Human data to date have shown a favorable safety profile of our DNA immunotherapies delivered using electroporation.

We or our collaborators are currently conducting or planning clinical studies of our proprietary SynCon® immunotherapies for HPV-caused pre-cancers, including cervical, anal and vulvar neoplasia; HPV-caused cancers, including head and neck and cervical; bladder cancer; glioblastoma multiforme, or GBM; prostate cancer, breast, lung and pancreatic cancers; hepatitis C virus, or HCV; hepatitis B virus; or HBV; HIV; Ebola; Middle East Respiratory Syndrome, or MERS; and Zika virus. We plan to open sites for a Phase 1/2a clinical trial to evaluate the safety, immunogenicity and preliminary clinical efficacy of our product candidates INO-5401 and INO-9012, in combination with Genentech's atezolizumab, in participants with locally advanced unresectable or metastatic/recurrent urothelial carcinoma (bladder cancer) in the second quarter of 2018. In addition, we plan to open sites for a Phase 1/2 clinical trial to evaluate the safety, immunogenicity and preliminary efficacy of INO-5401 and INO-9012, in combination with Regeneron's cemiplimab, in patients with newly diagnosed GBM in the second quarter of 2018.

In December 2017, we entered into an Amended and Restated License and Collaboration Agreement (the "ApolloBio Agreement"), with ApolloBio Corporation ("ApolloBio"). Under the terms of the ApolloBio Agreement, we have granted to ApolloBio the exclusive right to develop and commercialize VGX-3100 within the territories of China, Hong Kong, Macao, Taiwan and potentially Korea. In March 2018, upon the ApolloBio Agreement becoming effective, we received an upfront payment of $23.0 million, which was reduced by an aggregate of $3.6 million in foreign income taxes and certain foreign non-income taxes required to be withheld from the payment, resulting in net proceeds of $19.4 million to us. We also incurred advisory fees of $960,000 in connection with receiving the up-front payment. No additional advisory fees are due related to the ApolloBio Agreement. In addition to the upfront payment, we are entitled to receive up to an aggregate of $20.0 million, less required income, withholding and other taxes, upon the achievement of specified milestones related to the regulatory approval of VGX-3100 in the United States, China and Korea. In the event that VGX-3100 is approved for marketing, we will be entitled to receive royalty payments based on a tiered percentage of annual net sales, with such percentage being in the low- to mid-teens, subject to reduction in the event of generic competition in a particular territory. ApolloBio's obligation to pay royalties will continue for 10 years after the first commercial sale in a particular territory or, if later, until the expiration of the last-to-expire patent covering the licensed products in the specified territory.

Our corporate strategy is to advance and protect our differentiated immunotherapy platform and use its unique capabilities to design and develop an array of cancer and infectious disease immunotherapy and vaccine products. We aim to advance products through to commercialization. We continue to leverage third-party resources through collaborations and partnerships, including product license agreements. Our partners and collaborators include MedImmune, LLC, The Wistar Institute, University of Pennsylvania, GeneOne Life Science Inc., ApolloBio Corporation, Regeneron Pharmaceuticals, Inc., Genentech, Inc., Plumbline Life Sciences, Inc., Drexel University, National Microbiology Laboratory of the Public Health Agency of Canada, National Institute of Allergy and Infectious Diseases ("NIAID"), United States Military HIV Research Program ("USMHRP"), U.S. Army Medical Research Institute of Infectious Diseases ("USAMRIID"), National Institutes of Health ("NIH"), HIV Vaccines Trial Network ("HVTN"), Defense Advanced Research Projects Agency ("DARPA"), Parker Institute for Cancer Immunotherapy, and Coalition for Epidemic Preparedness Innovations ("CEPI").

In August 2016, we incorporated a subsidiary, GENEOS Therapeutics, Inc. ("GENEOS"), to develop and commercialize neoantigen based personalized cancer therapies. While we leverage our SynCon immunotherapy and CELLECTRA® electroporation technologies to break tolerance and create cancer products targeting shared tumor specific antigens, GENEOS is focusing on leveraging our immunotherapy technology platform to advance the field of patient-specific neoantigen therapies for cancer. We believe that our clinically validated DNA-based platform is well suited for advancing individualized therapies due to its rapid product design and manufacturing benefits, ability to combine multiple neoantigens into formulations, and generation of potent killer T cell responses that are needed to drive clinical efficacy. We have exclusively licensed our SynCon immunotherapy and CELLECTRA® electroporation technology platform to GENEOS to be used in the field of personalized, neoantigen-based therapy for cancer. We

currently own 100% of the outstanding equity of GENEOS, although GENEOS currently plans to raise capital from the issuance of equity. This capital may be provided by third parties, which would reduce our ownership percentage, although we may also provide additional equity funding to GENEOS.

All of our product candidates are in the research and development phase. We have not generated any revenues from the sale of any products, and we do not expect to generate any such revenues for at least the next several years. We earn revenue from license fees and milestone revenue and collaborative research and development agreements. Our product candidates will require significant additional research and development efforts, including extensive preclinical and clinical testing. All product candidates that we advance to clinical testing will require regulatory approval prior to commercial use, and will require significant costs for commercialization. We may not be successful in our research and development efforts, and we may never generate sufficient product revenue to be profitable.

Critical Accounting Policies

There have been no significant changes to our critical accounting policies since December 31, 2017 other than our adoption of ASU No. 2014-09, Revenue from Contracts with Customers, or Topic 606, as of January 1, 2018. Topic 606 amended the existing accounting standards for revenue recognition. We also adopted ASU No. 2016-01, Recognition and Measurement of Financial Assets and Financial Liabilities, which amended the accounting standards for the measurement of some kinds of equity investments. For a description of newly adopted critical accounting policies, see Note 3 to our Condensed Consolidated Financial Statements included in this Quarterly Report. For a description of our other critical accounting policies that affect our significant judgments and estimates used in the preparation of our consolidated financial statements, refer to Item 7, “Management’s Discussion and Analysis of Financial Condition and Results of Operations” in our 2017 Annual Report and Note 2 to our audited Consolidated Financial Statements contained in our 2017 Annual Report.

Adoption of Recent Accounting Pronouncements

Information regarding recent accounting pronouncements is contained in Note 5 to the Condensed Consolidated Financial Statements, included in this Quarterly Report.

Results of Operations

Revenue. We had total revenue of $1.5 million for the three months ended March 31, 2018, as compared to $10.4 million for the three months ended March 31, 2017. Revenue primarily consisted of revenue under collaborative research and development arrangements for the three months ended March 31, 2018 and revenue under collaborative research and development arrangements, grants and government contracts for the three months ended March 31, 2017. As of January 1, 2018, accounting for our various grant agreements falls under the contributions guidance under Subtopic 958-605, Not-for-Profit Entities-Revenue Recognition, which is outside the scope of Topic 606, as the government agencies granting us funds are not receiving reciprocal value for their contributions. Beginning on January 1, 2018, all contributions received from current grant agreements are being recorded as a contra-expense as opposed to revenue, on the condensed consolidated statement of operations. For the three months ended March 31, 2018, $2.2 million was recorded as contra-research and development expense, which would have been classified as grant revenue in the prior year. See Note 5 to the Condensed Consolidated Financial Statements included in this Quarterly Report for further discussion.

Revenue under collaborative research and development arrangements, including arrangements with affiliated entities, was $1.4 million for the three months ended March 31, 2018, as compared to $4.5 million for the three months ended March 31, 2017. The decrease for the three-month period year over year was primarily due to no revenue being recognized from our Roche collaboration agreement in 2018, compared to the $4.0 million that was recognized from the Roche termination payment in the first quarter of 2017. This decrease was partially offset by an increase of $983,000 in revenues recognized from MedImmune, among other variances.

During the three months ended March 31, 2018, grant funding received and recorded as contra-research and development expense was $2.2 million, as compared to $5.9 million recorded as grant and miscellaneous revenue, including arrangements with affiliated entities for the three months ended March 31, 2017. The decrease in grant funding recorded for the three-month period year over year was primarily due to a decrease from our DARPA Ebola grant of $4.7 million, partially offset by an increase from our Zika virus sub-grant of $1.2 million.

Research and development expenses. Research and development expenses for the three months ended March 31, 2018 were $24.6 million, as compared to $24.5 million for the three months ended March 31, 2017. The increase for the three-month period year over year was primarily due to increases of $1.9 million related to our VGX-3100 clinical trials, $1.1 million related to our collaboration with MedImmune and $1.1 million related to increased employee headcount to support clinical trials and partnerships. These increases were offset by the $2.2 million contra-research and development expense recorded from grant agreements as discussed above, as well as a decrease of $1.9 million in expenses related to the DARPA Ebola grant as it nears completion, among other variances.

General and administrative expenses. General and administrative expenses, which include business development expenses, the amortization of intangible assets and patent expenses, were $9.7 million for the three months ended

March 31, 2018, as compared to $7.8 million for the three months ended March 31, 2017. The increase for the three-month period year over year was primarily related to the $1.4 million of foreign non-income taxes withheld from the ApolloBio upfront payment we received in March 2018 and the advisory fees of $960,000 incurred in connection with receiving the upfront payment. There were also increases in depreciation expense, rent expense and personnel costs from increases in employee headcount of $281,000, $233,000 and $224,000, respectively, offset by a decrease in non-cash stock-based compensation expense of $1.7 million, among other variances.

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Stock-based compensation. Stock-based compensation expense is measured at the grant date, based on the fair value of the award, and is recognized as expense over the requisite vesting period. Total employee and director stock-based compensation expense for the three months ended March 31, 2018 and 2017 was $3.4 million and $5.2 million, respectively. Of these amounts, $2.1 million and $2.2 million were included in research and development expenses, respectively, and $1.3 million and $3.0 million were included in general and administrative expenses, respectively. The decrease for the three-month period year over year was primarily due to a lower weighted average grant date fair value per share for the awards granted during the first quarter of 2018.

Interest and other income, net. Interest and other income, net, for the three months ended March 31, 2018 and 2017 was $313,000 and $340,000, respectively.

Change in fair value of common stock warrants. The change in fair value of common stock warrants we issued in March 2013 for the three months ended March 31, 2018 and 2017 was a decrease of $128,000 and an increase of $116,000, respectively. The variance is due to the revaluation of the warrants at each balance sheet date to their fair value. If unexercised, the remaining warrants will expire in September 2018.

Gain (loss) on investment in affiliated entities. The gain (loss) is a result of the change in the fair market value of the investments in GeneOne and PLS for a gain of $2.4 million for the three months ended March 31, 2018 and a loss of $(1.6) million from GeneOne for the three months ended March 31, 2017. After the adoption of ASU No. 2016-01 on January 1, 2018, unrealized gains and losses on PLS are recorded on the condensed consolidated statement of operations as a gain (loss) on investment in affiliated entities rather than the condensed consolidated statement of comprehensive income (loss).

Provision for income taxes. The provision for income taxes of $2.2 million for the three months ended March 31, 2018 is related to foreign income taxes on the upfront payment received from ApolloBio in March 2018.

Liquidity and Capital Resources

Historically, our primary uses of cash have been to finance research and development activities including clinical trial activities in the oncology, DNA vaccines and other immunotherapy areas of our business. Since inception, we have satisfied our cash requirements principally from proceeds from the sale of equity securities.

Working Capital and Liquidity

As of March 31, 2018, we had cash and short-term investments of $112.8 million and working capital of $72.5 million, as compared to $127.4 million and $103.0 million, respectively, as of December 31, 2017. The decrease in cash and short-term investments during the three months ended March 31, 2018 was primarily due to expenditures related to our research and development activities, clinical trials and various general and administrative expenses related to legal, consultants, accounting and audit, and corporate development, partially offset by the net proceeds received from ApolloBio of $19.4 million.

Cash Flows

Net cash used in operating activities was $12.6 million and $15.2 million for the three months ended March 31, 2018 and 2017, respectively. Net cash used in operating activities for three months ended March 31, 2018 consisted of net loss of $32.4 million less changes in net operating assets and liabilities of $16.9 million and net non-cash adjustments of $2.8 million. The primary non-cash income (expenses) added back to net loss included stock-based compensation of $3.6 million and depreciation and amortization of $1.3 million, offset in part by the gain on investment in affiliated entity of $2.4 million.

Net cash used in operating activities for the three months ended March 31, 2017 consisted of net loss of $23.1 million plus changes in net operating assets and liabilities of ($1.3) million, partially offset by net non-cash adjustments of $9.1 million. The primary non-cash expenses added back to net loss included loss on investment in affiliated entity of $1.6 million, stock-based compensation of $5.4 million and depreciation and amortization of $929,000.

Net cash provided by investing activities was $26.8 million and $18.2 million for the three months ended March 31, 2018 and 2017, respectively. The variance was primarily the result of timing differences in short-term investment purchases, sales and maturities.

Net cash (used in) provided by financing activities was $(506,000) and $826,000 for the three months ended March 31, 2018 and 2017, respectively. The variance was primarily due to fewer stock options exercised during the period. During the three months ended March 31, 2018, stock options to purchase 20,625 shares of common stock were exercised for net proceeds of $48,000. During the three months ended March 31, 2017, stock options to purchase 312,759 shares of common stock were exercised for net proceeds of $1.6 million.

As of March 31, 2018, we had an accumulated deficit of $555.5 million. We have operated at a loss since 1994 and we expect to continue to operate at a loss for some time. The amount of the accumulated deficit will continue to increase, as it will be expensive to continue research and development efforts. If these activities are successful and if we receive approval from the

FDA to market our DNA vaccine products, then we will need to raise additional funding to market and sell the approved vaccine products and equipment. We cannot predict the outcome of the above matters at this time. We are evaluating potential collaborations as an additional way to fund operations. We believe that our current cash and short-term investments are sufficient to meet planned working capital requirements for at least the next twelve months from the date this Quarterly Report is filed.

Off-Balance Sheet Arrangements

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

ITEM 3. QUALITATIVE AND QUANTITATIVE DISCLOSURES ABOUT MARKET RISK

Interest Rate Risk

Market risk represents the risk of loss that may impact our consolidated financial position, results of operations or cash flows due to adverse changes in financial and commodity market prices and rates. We are exposed to market risk primarily in the area of changes in United States interest rates and conditions in the credit markets, and the recent fluctuations in interest rates and availability of funding in the credit markets primarily impact the performance of our investments. We do not have any material foreign currency or other derivative financial instruments. Under our current policies, we do not use interest rate derivative instruments to manage exposure to interest rate changes. We attempt to increase the safety and preservation of our invested principal funds by limiting default risk, market risk and reinvestment risk. We mitigate default risk by investing in investment grade securities. Due to the short-term maturities of our cash equivalents and the low risk profile of our investments at March 31, 2018, an immediate 100 basis point change in interest rates would not have a material effect on the fair market value of our cash equivalents.

Fair Value Measurements

We account for our common stock warrants pursuant to the authoritative guidance on accounting for derivative financial instruments indexed to, and potentially settled in, a company's own stock, on the understanding that in compliance with applicable securities laws, the registered warrants require the issuance of registered securities upon exercise and do not sufficiently preclude an implied right to net cash settlement. We classify registered warrants on the consolidated balance sheet as a current liability that is revalued at each balance sheet date subsequent to the initial issuance.

The investment in affiliated entities represents our ownership interest in the Korean-based companies, GeneOne and PLS. We report these investments at fair value on the consolidated balance sheet using the closing price of GeneOne and PLS shares of common stock as reported on the date of determination on the Korean Stock Exchange and Korea New Exchange Market, respectively.

Foreign Currency Risk

We have operated primarily in the United States and most transactions during the three months ended March 31, 2018 were made in United States dollars. Accordingly, we have not had any material exposure to foreign currency rate fluctuations, with the exception of the valuation of our equity investments in GeneOne and PLS which are denominated in South Korean Won and then translated into United States dollars. We do not have any foreign currency hedging instruments in place.

Certain transactions related to us are denominated primarily in foreign currencies, including Euros, British Pounds, Canadian Dollars and South Korean Won. As a result, our financial results could be affected by factors such as changes in foreign currency exchange rates or weak economic conditions in foreign markets where we conduct business.

We do not use derivative financial instruments for speculative purposes. We do not engage in exchange rate hedging or hold or issue foreign exchange contracts for trading purposes. Currently, we do not expect the impact of fluctuations in the relative fair value of other currencies to be material in 2018.

ITEM 4. CONTROLS AND PROCEDURES

Evaluation of Disclosure Controls and Procedures

We maintain disclosure controls and procedures, which are designed to ensure that information required to be disclosed in the reports we file or submit under the Securities Exchange Act of 1934, as amended, is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms, and that such information is accumulated and communicated to our management, including our Chief Executive Officer, or CEO, and Chief Financial Officer, or CFO, as appropriate to allow timely decisions regarding required disclosures.

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In designing and evaluating our disclosure controls and procedures, management recognizes that disclosure controls and procedures, no matter how well conceived and operated, can provide only reasonable, not absolute, assurance that the objectives of the disclosure controls and procedures are met. Additionally, in designing disclosure controls and procedures, our management necessarily was required to apply its judgment in evaluating the cost-benefit relationship of possible disclosure controls and procedures. The design of any system of controls also is based in part upon certain assumptions about the likelihood of future events, and there can be no assurance that any design will succeed in achieving its stated goals under all potential future conditions; over time, controls may become inadequate because of changes in conditions, or the degree of compliance with policies or procedures may deteriorate. Because of the inherent limitations in a control system, misstatements due to error or fraud may occur and not be detected.

Based on an evaluation carried out as of the end of the period covered by this Quarterly Report, under the supervision and with the participation of our management, including our CEO and CFO, our CEO and CFO have concluded that, as of the end of such period, our disclosure controls and procedures (as defined in Rule 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934) were effective as of March 31, 2018 at the reasonable assurance level.

Changes in Internal Control over Financial Reporting

There have not been any changes in our internal control over financial reporting that occurred during the quarter ended March 31, 2018 that materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Part II. Other Information

ITEM 1. LEGAL PROCEEDINGS

We are not currently a party to any material litigation or other material legal proceedings.

ITEM 1A. RISK FACTORS

Our business is subject to numerous risks. You should carefully consider and evaluate each of the following factors as well as the other information in this Quarterly Report on Form 10-Q, including our financial statements and the related notes, the risk factors discussed in our 2017 Annual Report, which we filed with the SEC on March 14, 2018, in evaluating our business and prospects. The risks and uncertainties described below are not the only ones we face. Additional risks and uncertainties not presently known to us or that we currently consider immaterial may also impair our business operations. If any of the following risks actually occur, our business and financial results could be harmed. In that case, the trading price of our common stock could decline. You should also consider the more detailed description of our business contained in our 2017 Annual Report.

Risks Related to Our Business and Industry

We have incurred losses since inception, expect to incur significant net losses in the foreseeable future and may never become profitable.

We have experienced significant operating losses to date; as of March 31, 2018, our accumulated deficit was approximately $555.5 million. We have generated limited revenues, primarily consisting of license revenue, grant funding and interest income. We expect to continue to incur substantial additional operating losses for at least the next several years as we advance our clinical trials and research and development activities. We may never successfully commercialize our vaccine product candidates or electroporation-based synthetic vaccine delivery technology and thus may never have any significant future revenues or achieve and sustain profitability.

We have limited sources of revenue and our success is dependent on our ability to develop our vaccine and immunotherapies and other product candidates and electroporation equipment.

We do not sell any products and may not have any other products commercially available for several years, if at all. Our ability to generate future revenues depends heavily on our success in:

- developing and securing United States and/or foreign regulatory approvals for our product candidates, including securing regulatory approval for conducting clinical trials with product candidates;
- developing our electroporation-based DNA delivery technology; and
- commercializing any products for which we receive approval from the FDA and foreign regulatory authorities.

Our electroporation equipment and product candidates will require extensive additional clinical study and evaluation, regulatory approval in multiple jurisdictions, substantial investment and significant marketing efforts before we generate any revenues from product sales. We are not permitted to market or promote our electroporation equipment and product candidates before we receive regulatory approval from the FDA or comparable foreign regulatory authorities. If we do not receive regulatory approval for and successfully commercialize any products, we will not generate any revenues from sales of electroporation equipment and products, and we may not be able to continue our operations.

None of our human vaccine and immunotherapy product candidates have been approved for sale, and we may not develop commercially successful vaccine products.

Our human vaccine and immunotherapy programs are in the early stages of research and development, and currently include vaccine product candidates in discovery, preclinical studies and Phase 1, 2 and 3 clinical trials. There are limited data regarding the efficiency of synthetic vaccine and immunotherapy candidates compared with conventional vaccines, and we must conduct a substantial amount of additional research and development before any regulatory authority will approve any of our vaccine product candidates. The success of our efforts to develop and commercialize our product candidates could fail for a number of reasons. For example, we could experience delays in product development and clinical trials. Our product candidates could be found to be ineffective or unsafe, or otherwise fail to receive necessary regulatory clearances. The products, if safe and effective, could be difficult to manufacture on a large scale or uneconomical to market, or our competitors could develop superior products more quickly and efficiently or more effectively market their competing products.

In addition, adverse events, or the perception of adverse events, relating to vaccine and immunotherapy candidates and delivery technologies may negatively impact our ability to develop commercially successful products. For example,

pharmaceutical companies have been subject to claims that the use of some pediatric vaccines has caused personal injuries, including brain damage, central nervous system damage and autism. These and other claims may influence public perception of the use of vaccine and immunotherapy products and could result in greater governmental regulation, stricter labeling requirements and potential regulatory delays in the testing or approval of our potential products.

We will need substantial additional capital to develop our synthetic vaccine and immunotherapy programs and electroporation delivery technology.

Conducting the costly and time consuming research, pre-clinical and clinical testing necessary to obtain regulatory approvals and bring our product candidates and delivery technology to market will require a commitment of substantial funds in excess of our current capital. Our future capital requirements will depend on many factors, including, among others:

- the progress of our current and new product development programs;
- the progress, scope and results of our pre-clinical and clinical testing;
- the time and cost involved in obtaining regulatory approvals;
- the cost of manufacturing our products and product candidates;
- the cost of prosecuting, enforcing and defending against patent infringement claims and other intellectual property rights;
- competing technological and market developments; and
- our ability and costs to establish and maintain collaborative and other arrangements with third parties to assist in potentially bringing our products to market.

Additional financing may not be available on acceptable terms, or at all. Domestic and international capital markets have from time to time experienced heightened volatility and turmoil, making it more difficult to raise capital through the issuance of equity securities. Volatility in the capital markets can also negatively impact the cost and availability of credit, creating illiquid credit markets and wider credit spreads. Concern about the stability of the markets generally and the strength of counterparties specifically has led many lenders and institutional investors to reduce, and in some cases cease to provide, funding to borrowers. To the extent we are able to raise additional capital through the sale of equity securities or we issue securities in connection with another transaction, the ownership position of existing stockholders could be substantially diluted. If additional funds are raised through the issuance of preferred stock or debt securities, these securities are likely to have rights, preferences and privileges senior to our common stock and may involve significant fees, interest expense, restrictive covenants and the granting of security interests in our assets. Fluctuating interest rates could also increase the costs of any debt financing we may obtain. Raising capital through a licensing or other transaction involving our intellectual property could require us to relinquish valuable intellectual property rights and thereby sacrifice long-term value for short-term liquidity.

Our failure to successfully address ongoing liquidity requirements would have a substantially negative impact on our business. If we are unable to obtain additional capital on acceptable terms when needed, we may need to take actions that adversely affect our business, our stock price and our ability to achieve cash flow in the future, including possibly surrendering our rights to some technologies or product opportunities, delaying our clinical trials or curtailing or ceasing operations.

We depend upon key personnel who may terminate their employment with us at any time and we may need to hire additional qualified personnel in order to obtain financing, pursue collaborations or develop or market our product candidates.

The success of our business strategy will depend to a significant degree upon the continued services of key management, technical and scientific personnel and our ability to attract and retain additional qualified personnel and managers, including personnel with expertise in clinical trials, government regulation, manufacturing, marketing and other areas. Competition for qualified personnel is intense among companies, academic institutions and other organizations. If we are unable to attract and retain key personnel and advisors, it may negatively affect our ability to successfully develop, test, commercialize and market our products and product candidates.

We face intense and increasing competition and many of our competitors have significantly greater resources and experience.

If any of our competitors develop products with efficacy or safety profiles significantly better than our products, we may not be able to commercialize our products, and sales of any of our commercialized products could be harmed. Some of our competitors and potential competitors have substantially greater product development capabilities and financial, scientific, marketing and human resources than we do. Competitors may develop products earlier, obtain FDA approvals for products more rapidly, or develop products that are more effective than those under development by us. We will seek to expand our

technological capabilities to remain competitive; however, research and development by others may render our technologies or products obsolete or noncompetitive, or result in treatments or cures superior to ours.

Many other companies are pursuing other forms of treatment or prevention for diseases that we target. For example, many of our competitors are working on developing and testing cancer vaccines and immunotherapies and several products such as the CAR-Ts developed by our competitors have been approved for human use. Our competitors and potential competitors include large pharmaceutical and more established biotechnology companies. These companies have significantly greater financial and other resources and greater expertise than us in research and development, securing government contracts and grants to support research and development efforts, manufacturing, pre-clinical and clinical testing, obtaining regulatory approvals and marketing. This may make it easier for them to respond more quickly than us to new or changing opportunities, technologies or market needs. Many of these competitors operate large, well-funded research and development programs and have significant products approved or in development. Small companies may also prove to be significant competitors, particularly through collaborative arrangements with large pharmaceutical companies or through acquisition or development of intellectual property rights. Our potential competitors also include academic institutions, governmental agencies and other public and private research organizations that conduct research, seek patent protection and establish collaborative arrangements for product and clinical development and marketing. Research and development by others may seek to render our technologies or products obsolete or noncompetitive.

If we lose or are unable to secure collaborators or partners, or if our collaborators or partners do not apply adequate resources to their relationships with us, our product development and potential for profitability will suffer.

We have entered into, or may enter into, distribution, co-promotion, partnership, sponsored research and other arrangements for development, manufacturing, sales, marketing and other commercialization activities relating to our products. For example, in the past we have entered into license and collaboration agreements. The amount and timing of resources applied by our collaborators are largely outside of our control.

If any of our current or future collaborators breaches or terminates our agreements, or fails to conduct our collaborative activities in a timely manner, our commercialization of products could be diminished or blocked completely. We may not receive any event-based payments, milestone payments or royalty payments under our collaborative agreements if our collaborative partners fail to develop products in a timely manner or at all. It is possible that collaborators will change their strategic focus, pursue alternative technologies or develop alternative products, either on their own or in collaboration with others. Further, we may be forced to fund programs that were previously funded by our collaborators, and we may not have, or be able to access, the necessary funding. The effectiveness of our partners, if any, in marketing our products will also affect our revenues and earnings.

We desire to enter into new collaborative agreements. However, we may not be able to successfully negotiate any additional collaborative arrangements and, if established, these relationships may not be scientifically or commercially successful. Our success in the future depends in part on our ability to enter into agreements with other highly-regarded organizations. This can be difficult due to internal and external constraints placed on these organizations. Some organizations may have insufficient administrative and related infrastructure to enable collaborations with many companies at once, which can extend the time it takes to develop, negotiate and implement a collaboration. Once news of discussions regarding possible collaborations are known in the medical community, regardless of whether the news is accurate, failure to announce a collaborative agreement or the entity's announcement of a collaboration with another entity may result in adverse speculation about us, resulting in harm to our reputation and our business.

Disputes could also arise between us and our existing or future collaborators, as to a variety of matters, including financial and intellectual property matters or other obligations under our agreements. These disputes could be both expensive and time-consuming and may result in delays in the development and commercialization of our products or could damage our relationship with a collaborator.

A small number of licensing partners and government contracts account for a substantial portion of our revenue.

We currently derive, and in the past we have derived, a significant portion of our revenue from a limited number of licensing partners and government grants and contracts. Revenue can fluctuate significantly depending on the timing of up-front and event-based payments and work performed. If we fail to sign additional future contracts with major licensing partners and the government, if a contract is delayed or deferred, or if an existing contract expires or is canceled and we fail to replace the contract with new business, our revenue would be adversely affected.

We have agreements with government agencies, which are subject to termination and uncertain future funding. We have entered into agreements with government agencies, such as the NIAID and DARPA, and we intend to continue entering into these agreements in the future. Our business is partially dependent on the continued performance by these

government agencies of their responsibilities under these agreements, including adequate continued funding of the agencies and their programs. We have no control over the resources and funding that government agencies may devote to these agreements, which may be subject to annual renewal and which generally may be terminated by the government agencies at any time.

Government agencies may fail to perform their responsibilities under these agreements, which may cause them to be terminated by the government agencies. In addition, we may fail to perform our responsibilities under these agreements. Many of our government agreements are subject to audits, which may occur several years after the period to which the audit relates. If an audit identifies significant unallowable costs, we could incur a material charge to our earnings or reduction in our cash position. As a result, we may be unsuccessful entering, or ineligible to enter, into future government agreements.

Our quarterly operating results may fluctuate significantly.

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 expenses related to our electroporation equipment, product candidates or future development programs;
- expenses related to corporate transactions, including ones not fully completed;
- addition or termination of clinical trials or funding support;
- any intellectual property infringement lawsuit in which we may become involved;
- any legal claims that may be asserted against us or any of our officers;
- regulatory developments affecting our electroporation equipment and product candidates or those of our competitors;
- our execution of any collaborative, licensing or similar arrangements, and the timing of payments we may make or receive under these arrangements; and
- if any of our products receives regulatory approval, the levels of underlying demand for our products.

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 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.

If we are unable to obtain FDA approval of our products, we will not be able to commercialize them in the United States.

We need FDA approval prior to marketing our electroporation equipment and products in the United States. If we fail to obtain FDA approval to market our electroporation equipment and product candidates, we will be unable to sell our products in the United States, which will significantly impair our ability to generate any revenues.

This regulatory review and approval process, which includes evaluation of pre-clinical studies and clinical trials of our products as well as the evaluation of our manufacturing processes and our third-party contract manufacturers' facilities, is lengthy, expensive and uncertain. To receive approval, we must, among other things, demonstrate with substantial evidence from well-controlled clinical trials that our electroporation equipment and product candidates are both safe and effective for each indication for which approval is sought. Satisfaction of the approval requirements typically takes several years and the time needed to satisfy them may vary substantially, based on the type, complexity and novelty of the product. We do not know if or when we might receive regulatory approvals for our electroporation equipment and any of our product candidates currently under development. Moreover, any approvals that we obtain may not cover all of the clinical indications for which we are seeking approval, or could contain significant limitations in the form of narrow indications, warnings, precautions or contra-indications with respect to conditions of use. In such event, our ability to generate revenues from such products would be greatly reduced and our business would be harmed.

The FDA has substantial discretion in the approval process and may either refuse to consider our application for substantive review or may form the opinion after review of our data that our application is insufficient to allow approval of our electroporation equipment and product candidates. If the FDA does not consider or approve our application, it may require that we conduct additional clinical, pre-clinical or manufacturing validation studies and submit that data before it will reconsider our application. Depending on the extent of these or any other studies, approval of any applications that we submit may be delayed by several years, or may require us to expend more

resources than we have available. It is also possible that additional studies, if performed and completed, may not be successful or considered sufficient by the FDA for approval or even to make our applications approvable. If any of these outcomes occur, we may be forced to abandon one or more of our applications for approval, which might significantly harm our business and prospects.

It is possible that none of our products or any product we may seek to develop in the future will ever obtain the appropriate regulatory approvals necessary for us or our collaborators to commence product sales. Any delay in obtaining, or an inability to obtain, applicable regulatory approvals would prevent us from commercializing our products, generating revenues and achieving and sustaining profitability.

Clinical trials involve a lengthy and expensive process with an uncertain outcome, and results of earlier studies and trials may not be predictive of future trial results.

Clinical testing is expensive and can take many years to complete, and its outcome is uncertain. Failure can occur at any time during the clinical trial process. The results of pre-clinical studies and early clinical trials of our products may not be predictive of the results of later-stage clinical trials. Results from one study may not be reflected or supported by the results of similar studies. Results of an animal study may not be indicative of results achievable in human studies. Human-use equipment and product candidates in later stages of clinical trials may fail to show the desired safety and efficacy traits despite having progressed through pre-clinical studies and initial clinical testing. The time required to obtain approval by the FDA and similar foreign authorities is unpredictable but typically takes many years following the commencement of clinical trials, depending upon numerous factors. In addition, approval policies, regulations, or the type and amount of clinical data necessary to gain approval may change. We have not obtained regulatory approval for any human-use products.

Our products could fail to complete the clinical trial process for many reasons, including the following:

- we may be unable to demonstrate to the satisfaction of the FDA or comparable foreign regulatory authorities that our electroporation equipment and a product candidate are safe and effective for any indication;
- the results of clinical trials may not meet the level of statistical significance required by the FDA or comparable foreign regulatory authorities for approval;
- the FDA or comparable foreign regulatory authorities may disagree with the design or implementation of our clinical trials;
- we may not be successful in enrolling a sufficient number of participants in clinical trials;
- we may be unable to demonstrate that our electroporation equipment and a product candidate's clinical and other benefits outweigh its safety risks;
- we may be unable to demonstrate that our electroporation equipment and a product candidate presents an advantage over existing therapies, or over placebo in any indications for which the FDA requires a placebo-controlled trial;
- the FDA or comparable foreign regulatory authorities may disagree with our interpretation of data from pre-clinical studies or clinical trials;
- the data collected from clinical trials of our product candidates may not be sufficient to support the submission of a new drug application or other submission or to obtain regulatory approval in the United States or elsewhere;
- the FDA or comparable foreign regulatory authorities may fail to approve the manufacturing processes or facilities of us or third-party manufacturers with which we or our collaborators contract for clinical and commercial supplies; and
- the approval policies or regulations of the FDA or comparable foreign regulatory authorities may significantly change in a manner rendering our clinical data insufficient for approval.

Delays in the commencement or completion of clinical testing could result in increased costs to us and delay or limit our ability to generate revenues.

Delays in the commencement or completion of clinical testing could significantly affect our product development costs. We do not know whether planned clinical trials will begin on time or be completed on schedule, if at all. In addition, ongoing clinical trials may not be completed on schedule, or at all, and could be placed on a hold by the regulators for various reasons. The commencement and completion of clinical trials can be delayed for a number of reasons, including delays related to:

- obtaining regulatory approval to commence a clinical trial;
- adverse results from third party clinical trials involving gene based therapies and the regulatory response thereto;
- reaching agreement on acceptable terms with prospective CROs and trial sites, the terms of which can be subject to extensive negotiation and may vary significantly among different CROs and trial sites;
- future bans or stricter standards imposed on gene based therapy clinical trials;
- manufacturing sufficient quantities of our electroporation equipment and product candidates for use in clinical trials;

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- obtaining institutional review board, or IRB, approval to conduct a clinical trial at a prospective site;
- slower than expected recruitment and enrollment of patients to participate in clinical trials for a variety of reasons, including competition from other clinical trial programs for similar indications;
- conducting clinical trials with sites internationally due to regulatory approvals and meeting international standards;
- retaining patients who have initiated a clinical trial but may be prone to withdraw due to side effects from the therapy, lack of efficacy or personal issues, or who are lost to further follow-up;
- collecting, reviewing and analyzing our clinical trial data; and
- global unrest, terrorist activities, and economic and other external factors.

Clinical trials may also be delayed as a result of ambiguous or negative interim results. In addition, a clinical trial may be suspended or terminated by us, the FDA, the IRB overseeing the clinical trial at issue, any of our clinical trial sites with respect to that site, 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 sites by the FDA or other regulatory authorities resulting in the imposition of a clinical hold;
- unforeseen safety issues; and
- lack of adequate funding to continue the clinical trial.

If we experience delays in completion of, or if we terminate, any of our clinical trials, the commercial prospects for our electroporation equipment and our product candidates may be harmed and our ability to generate product revenues will be delayed. 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 a product candidate. Further, delays in the commencement or completion of clinical trials may adversely affect the trading price of our common stock.

We and our collaborators rely on third parties to conduct our clinical trials. If these third parties do not successfully carry out their contractual duties or meet expected deadlines, we and our collaborators may not be able to obtain regulatory approval for or commercialize our product candidates.

We and our collaborators have entered into agreements with CROs to provide monitors for and to manage data for our on-going clinical programs. We and the CROs conducting clinical trials for our electroporation equipment and product candidates are required to comply with current good clinical practices, or GCPs, regulations and guidelines enforced by the FDA for all of our products in clinical development. The FDA enforces GCPs through periodic inspections of trial sponsors, principal investigators and trial sites. If we or the CROs conducting clinical trials of our product candidates fail to comply with applicable GCPs, the clinical data generated in the clinical trials may be deemed unreliable and the FDA may require additional clinical trials before approving any marketing applications.

If any relationships with CROs terminate, we or our collaborators may not be able to enter into arrangements with alternative CROs. In addition, these third-party CROs are not our employees, and we cannot control whether or not they devote sufficient time and resources to our on-going clinical programs or perform trials efficiently. These CROs may also have relationships with other commercial entities, including our competitors, for whom they may also be conducting clinical studies or other drug development activities, which could harm our competitive position. If CROs do not successfully carry out their contractual duties or obligations or meet expected deadlines, if they need to be replaced, or if the quality or accuracy of the clinical data they obtain is compromised due to the failure to adhere to our clinical protocols, regulatory requirements, or for other reasons, our clinical trials may be extended, delayed or terminated, and we may not be able to obtain regulatory approval for or successfully commercialize our product candidates. As a result, our financial results and the commercial prospects for our product candidates would be harmed, our costs could increase and our ability to generate revenues could be delayed. Cost overruns by or disputes with our CROs may significantly increase our expenses.

Even if our products receive regulatory approval, they may still face future development and regulatory difficulties.

Even if United States regulatory approval is obtained, the FDA may still impose significant restrictions on a product's indicated uses or marketing or impose ongoing requirements for potentially costly post-approval studies. This governmental oversight may be particularly strict with respect to gene based therapies. Our products will also be subject to ongoing FDA requirements governing the labeling, packaging, storage, advertising, promotion, record keeping and submission of safety and other post-market information. In addition, manufacturers of drug products and

their facilities are subject to continual review and periodic inspections by the FDA and other regulatory authorities for compliance with current good manufacturing practices, or cGMP, regulations. If we or a regulatory agency discover previously unknown problems with a product, such as

adverse events of unanticipated severity or frequency, or problems with the facility where the product is manufactured, a regulatory agency may impose restrictions on that product, the manufacturer or us, including requiring withdrawal of the product from the market or suspension of manufacturing. If we, our product candidates or the manufacturing facilities for our product candidates fail to comply with applicable regulatory requirements, a regulatory agency may:

- issue Warning Letters or untitled letters;
- impose civil or criminal penalties;
- suspend regulatory approval;
- suspend any ongoing clinical trials;
- refuse to approve pending applications or supplements to applications filed by us;
- impose restrictions on operations, including costly new manufacturing requirements; or
- seize or detain products or require us to initiate a product recall.

Even if our products receive regulatory approval in the United States, we may never receive approval or commercialize our products outside of the United States.

In order to market any electroporation equipment and product candidates outside of the United States, we must establish and comply with numerous and varying regulatory requirements of other countries regarding safety and efficacy. Approval procedures vary among countries and can involve additional product testing and additional administrative review periods. The time required to obtain approval in other countries might differ from that required to obtain FDA approval. The regulatory approval process in other countries may include all of the risks detailed above regarding FDA approval in the United States as well as other risks. Regulatory approval in one country does not ensure regulatory approval in another, but a failure or delay in obtaining regulatory approval in one country may have a negative effect on the regulatory process in others. Failure to obtain regulatory approval in other countries or any delay or setback in obtaining such approval could have the same adverse effects detailed above regarding FDA approval in the United States. Such effects include the risks that our product candidates may not be approved for all indications requested, which could limit the uses of our product candidates and have an adverse effect on their commercial potential or require costly, post-marketing follow-up studies.

We face potential product liability exposure and, if successful claims are brought against us, we may incur substantial liability.

The use of our electroporation equipment and synthetic vaccine candidates in clinical trials and the sale of any products for which we obtain marketing approval expose us to the risk of product liability claims. Product liability claims might be brought against us by consumers, health care providers, pharmaceutical companies or others selling or otherwise coming into contact with our products. For example, pharmaceutical companies have been subject to claims that the use of some pediatric vaccines has caused personal injuries, including brain damage, central nervous system damage and autism, and these companies have incurred material costs to defend these claims. If we cannot successfully defend ourselves against product liability claims, we could incur substantial liabilities. In addition, regardless of merit or eventual outcome, product liability claims may result in:

- decreased demand for our product candidates;
- impairment of our business reputation;
- withdrawal of clinical trial participants;
- costs of related litigation;
- distraction of management's attention from our primary business;
- substantial monetary awards to patients or other claimants;
- loss of revenues; and
- inability to commercialize our products.

We have obtained product liability insurance coverage for our clinical trials, but our insurance coverage may not be sufficient to reimburse us for any expenses or losses we may suffer. Moreover, insurance coverage is becoming increasingly expensive, and, in the future, we may not be able to maintain insurance coverage at a reasonable cost or in sufficient amounts to protect us against losses due to liability. On occasion, large judgments have been awarded in class action lawsuits based on products that had unanticipated side effects. A successful product liability claim or

series of claims brought against us could cause our stock price to decline and, if judgments exceed our insurance coverage, could adversely affect our business.

We currently have no marketing and sales organization. If we are unable to establish marketing and sales capabilities or enter into agreements with third parties to market and sell our products, we may not be able to generate product revenues.

We currently do not have a sales organization for the marketing, sales and distribution of our electroporation equipment and product candidates. In order to commercialize any products, we must build our marketing, sales, distribution, managerial and other non-technical capabilities or make arrangements with third parties to perform these services. We contemplate establishing our own sales force or seeking third-party partners to sell our products. The establishment and development of our own sales force to market any products we may develop will be expensive and time consuming and could delay any product launch, and we may not be able to successfully develop this capability. We will also have to compete with other pharmaceutical and biotechnology companies to recruit, hire, train and retain marketing and sales personnel. To the extent we rely on third parties to commercialize our approved products, if any, we will receive lower revenues than if we commercialized these products ourselves. In addition, we may have little or no control over the sales efforts of third parties involved in our commercialization efforts. In the event we are unable to develop our own marketing and sales force or collaborate with a third-party marketing and sales organization, we would not be able to commercialize our product candidates which would negatively impact our ability to generate product revenues.

If any of our products for which we receive regulatory approval does not achieve broad market acceptance, the revenues that we generate from their sales will be limited.

The commercial success of our electroporation equipment and product candidates for which we obtain marketing approval from the FDA or other regulatory authorities will depend upon the acceptance of these products by both the medical community and patient population. Coverage and reimbursement of our product candidates by third-party payors, including government payors, generally is also necessary for optimal commercial success. The degree of market acceptance of any of our approved products will depend on a number of factors, including:

- our ability to provide acceptable evidence of safety and efficacy;
- the relative convenience and ease of administration;
- the prevalence and severity of any actual or perceived adverse side effects;
- limitations or warnings contained in a product's FDA-approved labeling, including, for example, potential “black box” warnings
- availability of alternative treatments;
- pricing and cost effectiveness;
- the effectiveness of our or any future collaborators' sales and marketing strategies;
- our ability to obtain sufficient third-party coverage or reimbursement; and
- the willingness of patients to pay out of pocket in the absence of third-party coverage.

If our electroporation equipment and product candidates are approved but do not achieve an adequate level of acceptance by physicians, health care payors and patients, we may not generate sufficient revenue from these products, and we may not become or remain profitable. In addition, our efforts to educate the medical community and third-party payors on the benefits of our product candidates may require significant resources and may never be successful.

We are subject to uncertainty relating to reimbursement policies which, if not favorable to our product candidates, could hinder or prevent our products' commercial success.

Our ability to commercialize our electroporation equipment and product candidates successfully will depend in part on the extent to which governmental authorities, private health insurers and other third-party payors establish appropriate coverage and reimbursement levels for our product candidates and related treatments. As a threshold for coverage and reimbursement, third-party payors generally require that drug products have been approved for marketing by the FDA. Third-party payors also are increasingly challenging the effectiveness of and prices charged for medical products and services. We may not be able to obtain third-party coverage or reimbursement for our products in whole or in part.

Healthcare reform measures could hinder or prevent our products' commercial success.

In both the United States and certain foreign jurisdictions there have been, and we anticipate there will continue to be, a number of legislative and regulatory changes to the healthcare system that could impact our ability to sell any of our

products profitably. In the United States, the Federal government enacted healthcare reform legislation, the Patient Protection and Affordable Care Act, or the ACA. We believe there could be continuing trends towards expanding coverage to more individuals, containing health care costs and improving quality. At the same time, the rebates, discounts, taxes and other costs associated with the ACA are expected to be a significant cost to the pharmaceutical industry.

The continuing efforts of the government, insurance companies, managed care organizations and other payors of healthcare services to make and implement healthcare reforms may adversely affect:

- our ability to set a price we believe is fair for our products;
- our ability to generate revenues and achieve or maintain profitability;
- the availability of capital; and
- our ability to obtain timely approval of our products.

If we fail to comply with applicable healthcare regulations, we could face substantial penalties and our business, operations and financial condition could be adversely affected.

Certain federal and state healthcare laws and regulations pertaining to fraud and abuse and patients' rights may be applicable to our business. We could be subject to healthcare fraud and abuse and patient privacy regulation by both the federal government and the states in which we conduct our business, without limitation. The laws that may affect our ability to operate include:

- the federal healthcare program Anti-Kickback Statute, which prohibits, among other things, people from soliciting, receiving or providing remuneration, directly or indirectly, to induce either the referral of an individual, for an item or service or the purchasing or ordering of a good or service, for which payment may be made under federal healthcare programs such as the Medicare and Medicaid programs;
- federal false claims laws which prohibit, among other things, individuals or entities from knowingly presenting, or causing to be presented, claims for payment from Medicare, Medicaid, or other third-party payors that are false or fraudulent;
- the ACA expands the government's investigative and enforcement authority and increases the penalties for fraud and abuse, including amendments to both the False Claims Act and the Anti-Kickback Statute to make it easier to bring suit under those statutes;
- the federal Health Insurance Portability and Accountability Act of 1996, or HIPAA, which prohibits executing a scheme to defraud any healthcare benefit program or making false statements relating to healthcare matters and which also imposes certain requirements relating to the privacy, security and transmission of individually identifiable health information;
- the Federal Food, Drug, and Cosmetic Act, which among other things, strictly regulates drug product marketing, prohibits manufacturers from marketing drug products for off-label use and regulates the distribution of drug samples;
- the U.S. Foreign Corrupt Practices Act, which, among other things, prohibits companies issuing stock in the U.S. from bribing foreign officials for government contracts and other business; and
- state law equivalents of each of the above federal laws, such as anti-kickback and false claims laws which may apply to items or services reimbursed by any third-party payor, including commercial insurers, 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.

Additionally, the compliance environment is changing, with more states, such as California and Massachusetts, mandating implementation of compliance programs, compliance with industry ethics codes, and spending limits, and other states, such as Vermont, Maine, and Minnesota requiring reporting to state governments of gifts, compensation, and other remuneration to physicians. Under the ACA, pharmaceutical companies are required to record any transfers of value made to doctors and teaching hospitals and to disclose such data to HHS. These laws all provide for penalties for non-compliance. The shifting regulatory environment, along with the requirement to comply with multiple jurisdictions with different compliance and/or reporting requirements, increases the possibility that a company may run afoul of one or more laws.

If our operations are found to be in violation of any of the laws described above or any other governmental regulations that apply to us, we may be subject to penalties, including civil and criminal penalties, damages, fines and the curtailment or restructuring of our operations. Any penalties, damages, fines, curtailment or restructuring of our operations could adversely affect our ability to operate our business and our financial results. Any action against us for violation of these laws, even if we successfully defend against it, could cause us to incur significant legal expenses and divert our management's attention from the operation of our business. Moreover, achieving and sustaining compliance with applicable federal and state privacy, security and fraud laws may prove costly.

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If we and the contract manufacturers upon whom we rely fail to produce our systems and product candidates in the volumes that we require on a timely basis, or fail to comply with stringent regulations, we may face delays in the development and commercialization of our electroporation equipment and product candidates.

We manufacture some components of our electroporation systems and utilize the services of contract manufacturers to manufacture the remaining components of these systems and our product supplies for clinical trials. The manufacture of our systems and product supplies requires significant expertise and capital investment, including the development of advanced manufacturing techniques and process controls. Manufacturers often encounter difficulties in production, particularly in scaling up for commercial production. These problems include difficulties with production costs and yields, quality control, including stability of the equipment and product candidates and quality assurance testing, shortages of qualified personnel, as well as compliance with strictly enforced federal, state and foreign regulations. If we or our manufacturers were to encounter any of these difficulties or our manufacturers otherwise fail to comply with their obligations to us, our ability to provide our electroporation equipment to our partners and products to patients in our clinical trials or to commercially launch a product would be jeopardized. Any delay or interruption in the supply of clinical trial supplies could delay the completion of our clinical trials, increase the costs associated with maintaining our clinical trial program and, depending upon the period of delay, require us to commence new trials at significant additional expense or terminate the trials completely.

In addition, all manufacturers of our products must comply with cGMP requirements enforced by the FDA through its facilities inspection program. These requirements include, among other things, quality control, quality assurance and the generation and maintenance of records and documentation. Manufacturers of our products may be unable to comply with these cGMP requirements and with other FDA, state and foreign regulatory requirements. We have little control over our manufacturers' compliance with these regulations and standards. A failure to comply with these requirements may result in fines and civil penalties, suspension of production, suspension or delay in product approval, product seizure or recall, or withdrawal of product approval. If the safety of any product is compromised due to our or our manufacturers' failure to adhere to applicable laws or for other reasons, we may not be able to obtain regulatory approval for or successfully commercialize our products, and we may be held liable for any injuries sustained as a result. Any of these factors could cause a delay of clinical trials, regulatory submissions, approvals or commercialization of our products, entail higher costs or result in our being unable to effectively commercialize our products. Furthermore, if our manufacturers fail to deliver the required commercial quantities on a timely basis, pursuant to provided specifications and at commercially reasonable prices, we may be unable to meet demand for our products and would lose potential revenues.

Our failure to successfully acquire, develop and market additional product candidates or approved products would impair our ability to grow.

We may acquire, in-license, develop and/or market additional products and product candidates. The success of these actions depends partly upon our ability to identify, select and acquire promising product candidates and products. The process of proposing, negotiating and implementing a license or acquisition of a product candidate or approved product is lengthy and complex. Other companies, including some with substantially greater financial, marketing and sales resources, may compete with us for the license or acquisition of product candidates and approved products. We have limited resources to identify and execute the acquisition or in-licensing of third-party products, businesses and technologies and integrate them into our current infrastructure. Moreover, we may devote resources to potential acquisitions or in-licensing opportunities that are never completed, or we may fail to realize the anticipated benefits of such efforts. We may not be able to acquire the rights to additional product candidates on terms that we find acceptable, or at all.

In addition, future acquisitions may entail numerous operational and financial risks, including:

- exposure to unknown liabilities;
- disruption of our business and diversion of our management's time and attention to develop acquired products or technologies;
- incurrence of substantial debt or dilutive issuances of securities to pay for acquisitions;
- higher than expected acquisition and integration costs;
- increased amortization expenses;
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difficulty and cost in combining the operations and personnel of any acquired businesses with our operations and personnel;

- impairment of relationships with key suppliers or customers of any acquired businesses due to changes in management and ownership; and
- inability to retain key employees of any acquired businesses.

Further, any product candidate that we acquire may require additional development efforts prior to commercial sale, including extensive clinical testing and approval by the FDA and applicable foreign regulatory authorities. All product candidates are prone to risks of failure typical of product development, including the possibility that a product candidate will not be shown to be sufficiently safe and effective for approval by regulatory authorities.

Our business involves the use of hazardous materials and we and our third-party manufacturers must comply with environmental laws and regulations, which can be expensive and restrict how we do business.

Our and our third-party manufacturers' activities involve the controlled storage, use and disposal of hazardous materials, including the components of our product candidates and other hazardous compounds. We and our manufacturers are subject to federal, state and local laws and regulations governing the use, manufacture, storage, handling and disposal of these hazardous materials. In the event of an accident, state or federal authorities may curtail the use of these materials and interrupt our business operations. If we are subject to any liability as a result of our or our third-party manufacturers' activities involving hazardous materials, our business and financial condition may be adversely affected.

We may be subject to stockholder litigation, which would harm our business and financial condition.

We may have actions brought against us by stockholders relating to past transactions, changes in our stock price or other matters. Any such actions could give rise to substantial damages, and thereby have a material adverse effect on our consolidated financial position, liquidity, or results of operations. Even if an action is not resolved against us, the uncertainty and expense associated with stockholder actions could harm our business, financial condition and reputation. Litigation can be costly, time-consuming and disruptive to business operations. The defense of lawsuits could also result in diversion of our management's time and attention away from business operations, which could harm our business.

Our results of operations and liquidity needs could be materially affected by market fluctuations and general economic conditions.

Our results of operations could be materially affected by economic conditions generally, both in the United States and elsewhere around the world. Concerns over inflation, energy costs, geopolitical issues and the availability and cost of credit have in the past and may continue to contribute to increased volatility and diminished expectations for the economy and the markets going forward. Market upheavals may have an adverse effect on us. In the event of a market downturn, our results of operations could be adversely affected. Our future cost of equity or debt capital and access to the capital markets could be adversely affected, and our stock price could decline. There may be disruption in or delay in the performance of our third-party contractors and suppliers. If our contractors, suppliers and partners are unable to satisfy their contractual commitments, our business could suffer. In addition, we maintain significant amounts of cash and cash equivalents at one or more financial institutions that are in excess of federally insured limits, and we may experience losses on these deposits.

We are dependent on information technology and our systems and infrastructure face certain risks, including from cybersecurity breaches and data leakage.

We rely to a large extent upon sophisticated information technology systems to operate our businesses, some of which are managed, hosted provided and/or used for third-parties or their vendors. We collect, store and transmit large amounts of confidential information, and we deploy and operate an array of technical and procedural controls to maintain the confidentiality and integrity of such confidential information. A significant breakdown, invasion, corruption, destruction or interruption of critical information technology systems or infrastructure, by our workforce, others with authorized access to our systems or unauthorized persons could negatively impact operations. The ever-increasing use and evolution of technology, including cloud-based computing, creates opportunities for the unintentional dissemination or intentional destruction of confidential information stored in our or our third-party providers' systems, portable media or storage devices. We could also experience a business interruption, theft of confidential information or reputational damage from industrial espionage attacks, malware or other cyber-attacks, which may compromise our system infrastructure or lead to data leakage, either internally or at our third-party providers. While we have invested in the protection of data and information technology, there can be no assurance that our efforts will prevent service interruptions or security breaches. Any such interruption or breach of our systems could adversely affect our business operations and/or result in the loss of critical or sensitive confidential information

or intellectual property, and could result in financial, legal, business and reputational harm to us.

The recently passed comprehensive tax reform bill could adversely affect our business and financial condition.

On December 22, 2017, President Trump signed into law new legislation that significantly revises the Internal Revenue Code of 1986, as amended, or the Code. The newly enacted federal income tax law, among other things, contains significant changes to corporate taxation, including reduction of the corporate tax rate from a top marginal rate of 35 percent to a flat rate

of 21 percent, limitation of the tax deduction for interest expense to 30 percent of adjusted earnings (except for certain small businesses), limitation of the deduction for net operating losses to 80 percent of current-year taxable income and elimination of net operating loss carrybacks, one time taxation of offshore earnings at reduced rates regardless of whether they are repatriated, immediate deductions for certain new investments instead of deductions for depreciation expense over time, and modifying or repealing many business deductions and credits (including reducing the business tax credit for certain clinical testing expenses incurred in the testing of certain drugs for rare diseases or conditions). Notwithstanding the reduction in the corporate income tax rate, the overall impact of the new federal tax law is uncertain and our business and financial condition could be adversely affected. In addition, it is uncertain if and to what extent various states will conform to the newly enacted federal tax law.

Risks Related to Our Intellectual Property

It is difficult and costly to generate and protect our intellectual property and our proprietary technologies, and we may not be able to ensure their protection.

Our commercial success will depend in part on obtaining and maintaining patent, trademark, trade secret, and other intellectual property protection relating to our electroporation equipment and product candidates, as well as successfully defending these intellectual property rights against third-party challenges.

The patent positions of pharmaceutical and biotechnology companies can be highly uncertain and involve complex legal and factual questions for which important legal principles remain unresolved. The laws and regulations regarding the breadth of claims allowed in biotechnology patents have evolved over recent years and continues to undergo review and revision, both in the United States and abroad. The biotechnology patent situation outside the United States can be even more uncertain depending on the country. Changes in either the patent laws or in interpretations of patent laws in the United States and other countries may diminish the value of our intellectual property. Accordingly, we cannot predict the breadth of claims that may be allowed or enforced in our licensed patents, our patents or in third-party patents, nor can we predict the likelihood of our patents surviving a patent validity challenge.

The degree of future protection for our intellectual property rights is uncertain, because legal decision-making can be unpredictable, thereby often times resulting in limited protection, which may not adequately protect our rights or permit us to gain or keep our competitive advantage, or resulting in an invalid or unenforceable patent. For example:

- we, or the parties from whom we have acquired or licensed patent rights, may not have been the first to file the underlying patent applications or the first to make the inventions covered by such patents;
- the named inventors or co-inventors of patents or patent applications that we have licensed or acquired may be incorrect, which may give rise to inventorship and ownership challenges;
- others may develop similar or alternative technologies, or duplicate any of our products or technologies that may not be covered by our patents, including design-arounds;
- pending patent applications may not result in issued patents;
- the issued patents covering our products and technologies may not provide us with any competitive advantages or have any commercial value;
- the issued patents may be challenged and invalidated, or rendered unenforceable;
- the issued patents may be subject to reexamination, which could result in a narrowing of the scope of claims or cancellation of claims found unpatentable;
- we may not develop or acquire additional proprietary technologies that are patentable;
- our trademarks may be invalid or subject to a third party's prior use; or
- our ability to enforce our patent rights will depend on our ability to detect infringement, and litigation to enforce patent rights may not be pursued due to significant financial costs, diversion of resources, and unpredictability of a favorable result or ruling.

We depend, in part, on our licensors and collaborators to protect a portion of our intellectual property rights. In such cases, our licensors and collaborators may be primarily or wholly responsible for the maintenance of patents and prosecution of patent applications relating to important areas of our business. If any of these parties fail to adequately protect these products with issued patents, our business and prospects would be harmed significantly.

We also may rely on trade secrets to protect our technology, especially where we do not believe patent protection is appropriate or obtainable. However, trade secrets are difficult to protect. Although we use reasonable efforts to protect

our trade secrets, our employees, consultants, contractors, outside scientific collaborators and other advisors may unintentionally or willfully disclose our trade secrets to competitors. Enforcing a claim that a third-party entity illegally obtained and is using any

of our trade secrets is expensive and time consuming, and the outcome is unpredictable. In addition, courts outside the United States are sometimes less willing to protect trade secrets. Moreover, our competitors may independently develop equivalent knowledge, methods and know-how.

If we or our licensors fail to obtain or maintain patent protection or trade secret protection for our product candidates or our technologies, third parties could use our proprietary information, which could impair our ability to compete in the market and adversely affect our ability to generate revenues and attain profitability.

From time to time, U.S. and other policymakers have proposed reforming the patent laws and regulations of their countries. In September 2011 the America Invents Act (the Act) was signed into law. The Act changed the current "first-to-invent" system to a system that awards a patent to the "first-inventor-to-file" for an application for a patentable invention. The Act also created a procedure to challenge newly issued patents in the patent office via post-grant proceedings and new inter parties reexamination proceedings. These changes may make it easier for competitors to challenge our patents, which could result in increased competition and have a material adverse effect on our product sales, business and results of operations. The changes may also make it harder to challenge third-party patents and place greater importance on being the first inventor to file a patent application on an invention.

If we are sued for infringing intellectual property rights of third parties, it will be costly and time consuming, and an unfavorable outcome in that litigation would have a material adverse effect on our business.

Other companies may have or may acquire intellectual property rights that could be enforced against us. If they do so, we may be required to alter our technologies, pay licensing fees or cease activities. If our products or technologies infringe the intellectual property rights of others, they could bring legal action against us or our licensors or collaborators claiming damages and seeking to enjoin any activities that they believe infringe their intellectual property rights.

Because patent applications can take many years to issue, and there is a period when the application remains undisclosed to the public, there may be currently pending applications unknown to us or reissue applications that may later result in issued patents upon which our products or technologies may infringe. There could also be existing patents of which we are unaware that our products or technologies may infringe. In addition, if third parties file patent applications or obtain patents claiming products or technologies also claimed by us in pending applications or issued patents, we may have to participate in interference or derivation proceedings in the United States Patent and Trademark Office to determine priority or derivation of the invention. If third parties file oppositions in foreign countries, we may also have to participate in opposition proceedings in foreign tribunals to defend the patentability of our filed foreign patent applications.

If a third party claims that we infringe its intellectual property rights, it could cause our business to suffer in a number of ways, including:

- we may become involved in time-consuming and expensive litigation, even if the claim is without merit, the third party's patent is invalid or we have not infringed;
- we may become liable for substantial damages for past infringement if a court decides that our technologies infringe upon a third party's patent;
- we may be enjoined by a court to stop making, selling or licensing our products or technologies without a license from a patent holder, which may not be available on commercially acceptable terms, if at all, or which may require us to pay substantial royalties or grant cross-licenses to our patents; and
- we may have to redesign our products so that they do not infringe upon others' patent rights, which may not be possible or could require substantial investment or time.

If any of these events occur, our business could suffer and the market price of our common stock may decline.

Risks Related to Our Common Stock

The price of our common stock may be volatile, and an investment in our common stock could decline substantially in value.

In light of our small size and limited resources, as well as the uncertainties and risks that can affect our business and industry, our stock price may be highly volatile and can be subject to substantial drops, with or even in the absence of news affecting our business. Period to period comparisons are not indicative of future performance. The following factors, in addition to the other risk factors described in this annual report, and the potentially low volume of trades in our common stock, may have a significant impact on the market price of our common stock, some of which are

beyond our control:

- developments concerning any research and development, clinical trials, manufacturing, and marketing efforts or collaborations;

- fluctuating public or scientific interest in the potential for influenza pandemic or other applications for our vaccine or other product candidates;
- our announcement of significant acquisitions, strategic collaborations, joint ventures or capital commitments;
- fluctuations in our operating results;
- announcements of technological innovations;
- new products or services that we or our competitors offer;
- the initiation, conduct and/or outcome of intellectual property and/or litigation matters;
- changes in financial or other estimates by securities analysts or other reviewers or evaluators of our business;
- conditions or trends in bio-pharmaceutical or other healthcare industries;
- regulatory developments in the United States and other countries;
- negative perception of gene based therapy;
- changes in the economic performance and/or market valuations of other biotechnology and medical device companies;
- additions or departures of key personnel;
- sales or other transactions involving our common stock;
- changes in our capital structure;
- sales or other transactions by executive officers or directors involving our common stock;
- changes in accounting principles;
- global unrest, terrorist activities, and economic and other external factors; and
- catastrophic weather and/or global disease pandemics.

The stock market in general has recently experienced relatively large price and volume fluctuations. In particular, the market prices of securities of smaller biotechnology and medical device companies have experienced dramatic fluctuations that often have been unrelated or disproportionate to the operating results of these companies. Continued market fluctuations could result in extreme volatility in the price of the common stock, which could cause a decline in the value of the common stock. In addition, price volatility may increase if the trading volume of our common stock remains limited or declines.

Anti-takeover provisions under our charter documents and Delaware law could delay or prevent a change of control which could limit the market price of our common stock.

Our amended and restated certificate of incorporation contains provisions that could delay or prevent a change of control of our company or changes in our board of directors that our stockholders might consider favorable. Some of these provisions include:

- the authority of our board of directors to issue shares of undesignated preferred stock and to determine the rights, preferences and privileges of these shares, without stockholder approval;
- all stockholder actions must be effected at a duly called meeting of stockholders and not by written consent; and
- the elimination of cumulative voting.

In addition, we are governed by the provisions of Section 203 of the Delaware General Corporate Law, which may prohibit certain business combinations with stockholders owning 15% or more of our outstanding voting stock. These and other provisions in our amended and restated certificate of incorporation, amended and restated bylaws and Delaware law could make it more difficult for stockholders or potential acquirers to obtain control of our board of directors or initiate actions that are opposed by the then-current board of directors, including to delay or impede a merger, tender offer or proxy contest involving our company. Any delay or prevention of a change of control transaction or changes in our board of directors could cause the market price of our common stock to decline.

We have never paid cash dividends on our common stock and we do not anticipate paying dividends in the foreseeable future.

We have paid no cash dividends on our common stock to date, and we currently intend to retain our future earnings, if any, to fund the development and growth of our business. In addition, the terms of any future debt or credit facility may preclude or limit our ability to pay any dividends. As a result, capital appreciation, if any, of our common stock will be your sole source of potential gain for the foreseeable future.

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ITEM 2. UNREGISTERED SALES OF EQUITY SECURITIES AND USE OF PROCEEDS
Not applicable.

ITEM 3. DEFAULTS UPON SENIOR SECURITIES
Not applicable.

ITEM 4. MINE SAFETY DISCLOSURES
Not applicable.

ITEM 5. OTHER INFORMATION

Not applicable.

ITEM 6. EXHIBITS

(a) Exhibits

Exhibit Number	Description of Document
31.1	Certification of Chief Executive Officer Pursuant to Item 601(b)(31) of Regulation S-K, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
31.2	Certification of Chief Financial Officer Pursuant to Item 601(b)(31) of Regulation S-K, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
32.1	Certification of the Chief Executive Officer and Chief Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.*
101.INS	XBRL Instance Document.
101.SCH	XBRL Taxonomy Extension Schema Document
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document.
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document.
101.LAB	XBRL Taxonomy Extension Label Linkbase Document.
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document.

* This exhibit shall not be deemed “filed” for purposes of Section 18 of the Securities Exchange Act of 1934 or otherwise subject to the liabilities of that section, nor shall it be deemed incorporated by reference in any filing under the Securities Act of 1933 or the Securities Exchange Act of 1934, whether made before or after the date hereof and irrespective of any general incorporation language in any filings.

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PHARMACEUTICALS, INC.

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.

Inovio Pharmaceuticals, Inc.

Date: May 9, 2018 By /s/ J. JOSEPH KIM
J. Joseph Kim
President, Chief Executive Officer and Director (On Behalf of the Registrant)

Date: May 9, 2018 By /s/ PETER KIES
Peter Kies
Chief Financial Officer (Principal Financial and Accounting Officer)