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

FORM 10-Q

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

For the quarterly period ended March 31, 2017

or

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

For transition period from _____ to _____.

Commission File Number: 001-31918

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

Delaware	**04-3072298**
(State or other jurisdiction of incorporation or organization)	**(I.R.S. Employer Identification No.)**
167 Sidney Street Cambridge, Massachusetts	**02139**
(Address of principal executive offices)	**(Zip code)**

(617) 679-5500
(Registrant's telephone number, including area code)

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

Indicate by check mark whether the registrant has submitted electronically 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 (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes ☒ No ☐

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

Large accelerated filer	☐	Accelerated filer	☒
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 Exchange Act). Yes ☐ No ☒

Common Stock, par value $.001 per share	149,148,384
Class	Outstanding as of April 28, 2017

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FORWARD-LOOKING STATEMENTS

This Quarterly Report on Form 10-Q contains forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended, or the Exchange Act. All statements, other than statements of historical fact, included or incorporated in this report regarding our strategy, future operations, clinical trials, collaborations, intellectual property, cash resources, financial position, future revenues, projected costs, prospects, plans, and objectives of management are forward-looking statements. The words "believes," "anticipates," "estimates," "plans," "expects," "intends," "may," "could," "should," "potential," "likely," "projects," "continue," "will," and "would" and similar expressions are intended to identify forward-looking statements, although not all forward-looking statements contain these identifying words. We cannot guarantee that we actually will achieve the plans, intentions or expectations disclosed in our forward-looking statements and you should not place undue reliance on our forward-looking statements. There are a number of important factors that could cause our actual results to differ materially from those indicated or implied by forward-looking statements. These important factors include those set forth below under Part II, Item 1A "Risk Factors," in this Quarterly Report on Form 10-Q and under Part I, Item 1A "Risk Factors" in our Annual Report on Form 10-K for the fiscal year ended December 31, 2016, which was filed with the SEC on March 15, 2017. These factors and the other cautionary statements made in this Quarterly Report on Form 10-Q should be read as being applicable to all related forward-looking statements whenever they appear in this Quarterly Report on Form 10-Q. In addition, any forward-looking statements represent our estimates only as of the date that this Quarterly Report on Form 10-Q is filed with the Securities and Exchange Commission, or the SEC, and should not be relied upon as representing our estimates as of any subsequent date. We do not assume any obligation to update any forward-looking statements. We disclaim any intention or obligation to update or revise any forward-looking statement, whether as a result of new information, future events or otherwise.

PART I — FINANCIAL INFORMATION

ITEM 1. FINANCIAL STATEMENTS.

IDERA PHARMACEUTICALS, INC.

CONDENSED BALANCE SHEETS
(UNAUDITED)

(In thousands, except per share amounts)	March 31, 2017	December 31, 2016
ASSETS		
Current assets:		
Cash and cash equivalents	$ 79,694	$ 80,667
Short-term investments	11,568	28,347
Prepaid expenses and other current assets	4,235	2,030
Total current assets	95,497	111,044
Property and equipment, net	1,744	1,853
Restricted cash and other assets	332	334
Total assets	$ 97,573	$ 113,231
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	$ 1,353	$ 556
Accrued expenses	4,369	7,394
Current portion of note payable	300	292
Current portion of deferred revenue	985	1,111
Total current liabilities	7,007	9,353
Deferred revenue, net of current portion	—	152
Note payable, net of current portion	131	209
Other liabilities	244	168
Total liabilities	7,382	9,882
Commitments and contingencies		
Stockholders' equity:		
Preferred stock, $0.01 par value, Authorized — 5,000 shares:		
Series A convertible preferred stock; Designated — 1,500 shares, Issued and outstanding — 1 share	—	—
Common stock, $0.001 par value, Authorized — 280,000 shares; Issued and outstanding — 149,135 and 149,065 shares at March 31, 2017 and December 31, 2016, respectively	149	149
Additional paid-in capital	643,611	641,687
Accumulated deficit	(553,568)	(538,470)
Accumulated other comprehensive loss	(1)	(17)
Total stockholders' equity	90,191	103,349
Total liabilities and stockholders' equity	$ 97,573	$ 113,231

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

IDERA PHARMACEUTICALS, INC.

CONDENSED STATEMENTS OF OPERATIONS AND COMPREHENSIVE LOSS
(UNAUDITED)

(In thousands, except per share amounts)	Three Months Ended March 31, 2017	2016
Alliance revenue	$ 378	$ 294
Operating expenses:		
Research and development	11,485	9,296
General and administrative	4,081	3,916
Total operating expenses	15,566	13,212
Loss from operations	(15,188)	(12,918)
Other income (expense):		
Interest income	153	120
Interest expense	(16)	(23)
Foreign currency exchange loss	(6)	(2)
Net loss	(15,057)	(12,823)
Basic and diluted net loss per common share (Note 13)	$ (0.10)	$ (0.11)
Shares used in computing basic and diluted net loss per common share	149,100	121,284
Net loss	$ (15,057)	$ (12,823)
Other comprehensive gain (loss):		
Unrealized gain on available-for-sale securities	16	134
Comprehensive loss	$ (15,041)	$ (12,689)

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

IDERA PHARMACEUTICALS, INC.

CONDENSED STATEMENTS OF CASH FLOWS
(UNAUDITED)

(In thousands)	Three Months Ended March 31, 2017	2016
Cash Flows from Operating Activities:		
Net loss	$ (15,057)	$ (12,823)
Adjustments to reconcile net loss to net cash used in operating activities:		
Stock-based compensation	1,784	1,716
Issuance of common stock for services rendered	43	32
Accretion of premiums and discounts on investments	74	195
Depreciation and amortization expense	176	157
Other	—	3
Changes in operating assets and liabilities:		
Prepaid expenses and other current assets	(2,205)	(46)
Accounts payable, accrued expenses, and other liabilities	(2,183)	(1,812)
Deferred revenue	(278)	(277)
Net cash used in operating activities	(17,646)	(12,855)
Cash Flows from Investing Activities:		
Purchases of available-for-sale securities	—	(2,946)
Proceeds from maturity of available-for-sale securities	16,720	9,239
Proceeds from sale of available-for-sale securities	—	1,974
Purchases of property and equipment	(30)	(90)
Net cash provided by investing activities	16,690	8,177
Cash Flows from Financing Activities:		
Proceeds from exercise of common stock warrants and options and employee stock purchases	57	36
Payments on note payable	(70)	(63)
Payments on capital lease	(4)	(2)
Net cash used in financing activities	(17)	(29)
Net decrease in cash and cash equivalents	(973)	(4,707)
Cash and cash equivalents, beginning of period	80,667	26,586
Cash and cash equivalents, end of period	$ 79,694	$ 21,879

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

IDERA PHARMACEUTICALS, INC.

NOTES TO CONDENSED FINANCIAL STATEMENTS
March 31, 2017

(UNAUDITED)

(1) Organization

Idera Pharmaceuticals, Inc. ("Idera" or the "Company") is a clinical-stage biopharmaceutical company focused on the discovery, development and commercialization of novel oligonucleotide therapeutics for oncology and rare diseases. The Company uses two distinct proprietary drug discovery technology platforms to design and develop drug candidates: its Toll-like receptor ("TLR") targeting technology and its third-generation antisense ("3GA") technology. The Company developed these platforms based on its scientific expertise and pioneering work with synthetic oligonucleotides as therapeutic agents. Using its TLR targeting technology, the Company designs synthetic oligonucleotide-based drug candidates to modulate the activity of specific TLRs. In addition, using its 3GA technology, the Company is developing drug candidates to turn off the messenger RNA ("mRNA") associated with disease causing genes. The Company believes that its 3GA technology may potentially reduce the immunotoxicity and increase the potency of earlier generation antisense and RNA interference ("RNAi") technologies.

Idera is focused on the clinical development of drug candidates for oncology and rare diseases characterized by small, well-defined patient populations with serious unmet medical needs. The Company believes it can develop and commercialize these targeted therapies on its own. To the extent the Company seeks to develop drug candidates for broader disease indications, it may explore potential collaborative alliances to support development and commercialization.

The Company's pipeline of drug candidates includes IMO-2125, IMO-8400 and IDRA-008.

TLRs are key receptors of the immune system and play a role in innate and adaptive immunity. As a result, the Company believes TLRs are potential therapeutic targets for the treatment of a broad range of diseases. Using its chemistry-based platform, the Company has designed TLR agonists and antagonists to act by modulating the activity of targeted TLRs. A TLR agonist is a compound that stimulates an immune response through the targeted TLR. A TLR antagonist is a compound that inhibits an immune response by blocking the targeted TLR.

The Company's TLR agonist lead drug candidate IMO-2125 is an agonist of TLR9. The Company is evaluating IMO-2125 for the treatment by intra-tumoral injection of multiple oncology indications both in combination with checkpoint inhibitors and as monotherapy. The Company is initially developing IMO-2125 for use in combination with checkpoint inhibitors for the treatment of patients with anti-PD1 refractory metastatic melanoma.

The Company's TLR antagonist lead drug candidate IMO-8400 is an antagonist of TLR7, TLR8 and TLR9. The Company is developing IMO-8400 for the treatment of a rare disease called dermatomyositis. The Company selected this indication for development based on the reported increase in TLR expression in this disease state, expression of cytokines indicative of key TLR-mediated pathways and the presence of auto-antibodies that can induce TLR-mediated immune responses.

The Company is developing its 3GA technology to "turn off" the mRNA associated with disease causing genes. The Company designed 3GA oligonucleotides to specifically address challenges associated with earlier generation antisense and RNAi technologies. Although currently used technologies to silence RNA have demonstrated the ability to inhibit the expression of disease-associated proteins, the Company believes that to reach their full therapeutic potential, gene silencing technologies need to achieve an improved therapeutic index with efficient systemic delivery, reduced immunotoxicity and increased potency. The Company has designed its 3GA oligonucleotides to provide these attributes.

In January 2017, the Company announced that we had selected its first 3GA candidate to enter clinical development. The Company is planning to develop IDRA-008 for a well-established liver target with available pre-clinical animal models and well-known clinical endpoints. IDRA-008 has potential for both broad and rare disease applications.

As of March 31, 2017 the Company had an accumulated deficit of $553.6 million. The Company expects to incur substantial operating losses in future periods. The Company does not expect to generate significant product revenue, sales-based milestones or royalties until the Company successfully completes development and obtains marketing approval for drug candidates, either alone or in collaborations with third parties, which the Company expects will take a number of years. In order to commercialize its drug candidates, the Company needs to complete clinical development and comply with comprehensive regulatory requirements.

The Company is subject to a number of risks and uncertainties similar to those of other companies of the same size within the biotechnology industry, such as uncertainty of clinical trial outcomes, uncertainty of additional funding, and history of operating losses.

The Company believes, based on its current operating plan, its existing cash, cash equivalents and investments will enable the Company to fund its operations into the second quarter of 2018. The Company has and will continue to evaluate available alternatives to extend its operations beyond the second quarter of 2018.

(2) New Accounting Pronouncements - Recently Issued

In May 2014, the Financial Accounting Standards Board (the "FASB") issued Accounting Standards Update ("ASU") No. 2014-09, Revenue from Contracts with Customers (Topic 606), which was amended by ASU No. 2015-14. ASU No. 2014-09, as amended by ASU No. 2015-14, requires an entity to recognize revenue from the transfer of promised goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services. In particular, this ASU addresses contracts with more than one performance obligation, as well as the accounting for some costs to obtain or fulfill a contract with a customer, and provides for additional disclosures with respect to revenues and cash flows arising from contracts with customers. This ASU will be effective for fiscal years beginning after December 15, 2017, including interim periods within that fiscal year. Early adoption of this ASU is permitted only for fiscal years beginning after December 15, 2016, including interim periods within that fiscal year. The Company expects to adopt ASU 2014-09 in the first quarter of 2018 and currently expects to adopt the modified retrospective transition method. The adoption of ASU 2014-09 may have a material effect on the Company's financial statements, including the footnote disclosures. To date, the Company has derived our revenues from a limited number of license and collaboration agreements. The consideration the Company is eligible to receive under these agreements includes upfront payments, research and development funding, contingent revenues in the form of commercial and development milestones and option payments and royalties. Each of the Company's license and collaboration agreements has unique terms that will need to be evaluated separately under the new standard. The Company has started our preliminary assessment of its active license and collaboration agreements. ASU 2014-09 differs from the current accounting standard in many respects, such as in the accounting for variable consideration, including milestone payments. Accordingly, the Company expects that our evaluation of the accounting for collaboration agreements under the new revenue standard could identify material changes from the current accounting treatment. In addition, the current accounting standards include a presumption that revenue from upfront non-refundable fees are recognized ratably over the performance period, unless another attribution method is determined to more closely approximate the delivery of the goods or services to the customer. The new accounting standard will require entities to determine an appropriate attribution method using either output or input methods and does not include a presumption that entities would default to a ratable attribution approach. These factors could materially impact the amount and timing of the Company's revenue recognition from its license and collaboration agreements under the new revenue standard.

In January 2016, the FASB issued ASU No. 2016-01, Recognition and Measurement of Financial Assets and Financial Liabilities. The amendments in ASU 2016-01 address certain aspects of recognition, measurement, presentation and disclosure of financial instruments. ASU 2016-01 will be effective for fiscal years beginning after December 15, 2017, including interim periods within those fiscal years. Early adoption of some of the amendments included in ASU 2016-01 for financial statements of fiscal years or interim periods that have not yet been issued is permitted as of the beginning of the fiscal year of adoption. The Company is currently evaluating the effect that the adoption of ASU 2016-01 will have on its financial statements.

In February 2016, the FASB issued ASU No. 2016-02, Leases. The amendments in ASU 2016-02 will require organizations that lease assets, with lease terms of more than 12 months, to recognize on the balance sheet the assets and liabilities for the rights and obligations created by those leases. Consistent with current U.S. Generally Accepted Accounting Principles ("U.S. GAAP"), the recognition, measurement, and presentation of expenses and cash flows arising

from a lease by a lessee primarily will depend on its classification as a finance or operating lease. However, unlike current U.S. GAAP which requires only capital leases to be recognized on the balance sheet, ASU No. 2016-02 will require both types of leases to be recognized on the balance sheet. ASU 2016-02 will be effective for fiscal years beginning after December 15, 2018, including interim periods within those fiscal years. Early adoption is permitted. The Company is currently evaluating the effect that the adoption of ASU 2016-02 will have on its financial statements.

In March 2016, the FASB issued ASU No. 2016-09, Compensation – Stock Compensation (Topic 718), which is effective for fiscal years beginning after December 15, 2016, and interim periods within those fiscal years. The Company has adopted this standard, which had the following impacts on its financial statements. (1) ASU 2016-09 requires organizations to recognize all income tax effects of awards in the statement of operations when the awards vest or are settled. The Company's net operating loss deferred tax assets increased by $1.4 million and were offset by a corresponding increase in the valuation allowance given the Company's continued loss position. Accordingly, the adoption of ASU 2016-09 has had no impact on the Accumulated deficit. (2) ASU 2016-09 allows organizations to repurchase more shares from employees than they could previously purchase for tax withholding purposes without triggering liability accounting. The adoption of this portion of ASU 2016-09 has no impact on the Company's financial statements. (3) ASU 2016-09 allows companies to make a policy election to account for forfeitures as they occur. The Company has made the policy election to account for forfeitures as they occurred and has used the modified retrospective transition method, resulting in a $41,000 reduction in Accumulated paid-in capital and an increase in Accumulated deficit as of January 1, 2017, to reflect the cumulative effect of previously estimated forfeitures.

(3) Unaudited Interim Financial Statements

The accompanying unaudited financial statements included herein have been prepared by the Company in accordance with U.S. GAAP for interim financial information and pursuant to the rules and regulations of the Securities and Exchange Commission (the "SEC"). Accordingly, certain information and footnote disclosures normally included in financial statements prepared in accordance with U.S. GAAP have been condensed or omitted pursuant to such rules and regulations. In the opinion of management, all adjustments, consisting of normal recurring adjustments, and disclosures considered necessary for a fair presentation of interim period results have been included. Interim results for the three months ended March 31, 2017 are not necessarily indicative of results that may be expected for the year ending December 31, 2017. For further information, refer to the financial statements and footnotes thereto included in the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2016, which was filed with the SEC on March 15, 2017.

(4) Financial Instruments

The fair value of the Company's financial instruments is determined and disclosed in accordance with the three-tier fair value hierarchy specified in Note 6, "Fair Value of Assets and Liabilities." The Company is required to disclose the estimated fair values of its financial instruments. The Company's financial instruments consist of cash, cash equivalents, available-for-sale investments, receivables and a note payable. The estimated fair values of these financial instruments approximate their carrying values as of March 31, 2017 and December 31, 2016. As of March 31, 2017 and December 31, 2016, the Company did not have any derivatives, hedging instruments or other similar financial instruments except for the note issued under the Company's loan and security agreement, which is discussed in Note 5(a) to the financial statements included in the Company's Annual Report on Form 10-K for the year ended December 31, 2016, including put and call features which the Company determined are clearly and closely associated with the debt host and do not require bifurcation as a derivative liability, or the fair value of the feature is immaterial.

(5) Cash and Cash Equivalents

The Company considers all highly liquid investments with maturities of 90 days or less when purchased to be cash equivalents. Cash and cash equivalents at March 31, 2017 and December 31, 2016 consisted of cash and money market funds.

(6) Fair Value of Assets and Liabilities

The Company measures fair value at the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date using assumptions that market participants

would use in pricing the asset or liability (the "inputs") into a three-tier fair value hierarchy. This fair value hierarchy gives the highest priority (Level 1) to quoted prices in active markets for identical assets or liabilities and the lowest priority (Level 3) to unobservable inputs in which little or no market data exists, requiring companies to develop their own assumptions. Observable inputs that do not meet the criteria of Level 1, and include quoted prices for similar assets or liabilities in active markets or quoted prices for identical assets and liabilities in markets that are not active, are categorized as Level 2. Level 3 inputs are those that reflect the Company's estimates about the assumptions market participants would use in pricing the asset or liability, based on the best information available in the circumstances. Valuation techniques for assets and liabilities measured using Level 3 inputs may include unobservable inputs such as projections, estimates and management's interpretation of current market data. These unobservable Level 3 inputs are only utilized to the extent that observable inputs are not available or cost-effective to obtain. The Company applies ASU No. 2011-04, Fair Value Measurement (Topic 820), in its fair value measurements and disclosures.

The table below presents the assets and liabilities measured and recorded in the financial statements at fair value on a recurring basis at March 31, 2017 and December 31, 2016 categorized by the level of inputs used in the valuation of each asset and liability.

(In thousands)	Total	Quoted Prices in Active Markets for Identical Assets or Liabilities (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
March 31, 2017				
Assets				
Money market funds	$ 79,357	$ 79,357	$ —	$ —
Short-term investments – corporate bonds	4,476	—	4,476	—
Short-term investments – municipal bonds	7,092	—	7,092	—
Total Assets	$ 90,925	$ 79,357	$ 11,568	$ —
Total Liabilities	$ —	$ —	$ —	$ —
December 31, 2016				
Assets				
Money market funds	$ 67,580	$ 67,580	$ —	$ —
Short-term investments – corporate bonds	19,729	—	19,729	—
Short-term investments – municipal bonds	8,618	—	8,618	—
Total Assets	$ 95,927	$ 67,580	$ 28,347	$ —
Total Liabilities	$ —	$ —	$ —	$ —

The Level 1 assets consist of money market funds, which are actively traded daily. The Level 2 assets consist of corporate bond and municipal bond investments the fair value of which may not represent actual transactions of identical securities. The fair value of corporate and municipal bonds is generally determined from quoted market prices received from pricing services based upon quoted prices from active markets and/or other significant observable market transactions at fair value. Since these fair values may not be based upon actual transactions of identical securities, they are classified as Level 2. Since all investments are classified as available-for-sale securities, any unrealized gains or losses are recorded in accumulated other comprehensive income or loss within stockholders' equity on the balance sheet. The Company did not elect to measure any other financial assets or liabilities at fair value at March 31, 2017 or December 31, 2016.

(7) Investments

The Company's available-for-sale investments at fair value consisted of the following at March 31, 2017 and December 31, 2016:

	March 31, 2017			
	Cost	Gross Unrealized (Losses)	Gross Unrealized Gain	Estimated Fair Value
	(In thousands)			
Short-term investments – corporate bonds	$ 4,477	$ (1)	$ —	$ 4,476
Short-term investments – municipal bonds	7,092	(1)	1	7,092
Total short-term investments	11,569	(2)	1	11,568
Total investments	$ 11,569	$ (2)	$ 1	$ 11,568

	December 31, 2016			
	Cost	Gross Unrealized (Losses)	Gross Unrealized Gains	Estimated Fair Value
	(In thousands)			
Short-term investments – corporate bonds	$ 19,740	$ (11)	$ —	$ 19,729
Short-term investments – municipal bonds	8,624	(6)	—	8,618
Total short-term investments	28,364	(17)	—	28,347
Total investments	$ 28,364	$ (17)	$ —	$ 28,347

The Company had no realized gains or losses from available-for-sale securities in the three months ended March 31, 2017 and 2016. There were no losses or other-than-temporary declines in value included in "Interest income" on the Company's condensed statements of operations and comprehensive loss for any securities for the three months ended March 31, 2017 and 2016. The Company had no auction rate securities as of March 31, 2017 and December 31, 2016. See Note 4, "Financial Instruments," and Note 6, "Fair Value of Assets and Liabilities" for additional information related to the Company's investments.

(8) Property and Equipment

At March 31, 2017 and December 31, 2016, net property and equipment at cost consisted of the following:

(In thousands)	March 31, 2017	December 31, 2016
Leasehold improvements	$ 671	$ 671
Laboratory equipment and other	5,111	5,127
Total property and equipment, at cost	5,782	5,798
Less: Accumulated depreciation and amortization	4,038	3,945
Property and equipment, net	$ 1,744	$ 1,853

Depreciation and amortization expense on property and equipment was approximately $176,000 in each of the three months ended March 31, 2017 and 2016. There were $33,000 and $99,000 in non-cash property additions, in the three months ended March 31, 2017 and 2016, respectively.

(9) Restricted Cash

As part of the Company's lease arrangement for its office and laboratory facility in Cambridge, Massachusetts, the Company is required to restrict cash held in a certificate of deposit securing a line of credit for the lessor. As of March 31, 2017 and December 31, 2016, the restricted cash amounted to $0.3 million held in certificates of deposit securing a line of credit for the lessor. The lease expires August 2022.

(10) Comprehensive Loss

Comprehensive income (loss) is defined as the change in equity of a business enterprise during a period from transactions and other events and circumstances from non-owner sources. Comprehensive loss for the three months ended March 31, 2017 and 2016 is comprised of reported net loss and any change in net unrealized gains and losses on investments during each period, which is included in accumulated other comprehensive income (loss) on the accompanying balance sheets. The Company applies ASU No. 2011-05, Comprehensive Income, by presenting the components of net income and other comprehensive income as one continuous statement.

The following table includes the changes in the accumulated balance of the component of other comprehensive income (loss) for the three months ended March 31, 2017 and 2016:

(In thousands)	Three Months Ended March 31, 2017	Three Months Ended March 31, 2016
Accumulated unrealized loss on available-for-sale securities at beginning of period	$ (17)	$ (134)
Change during the period	16	134
Accumulated unrealized loss on available-for-sale securities at end of period	$ (1)	$ —

(11) Collaboration with GlaxoSmithKline Intellectual Property Development Limited

In November 2015, the Company entered into a collaboration and license agreement with GlaxoSmithKline Intellectual Property Development Limited ("GSK") to license, research, develop and commercialize pharmaceutical compounds from the Company's 3GA technology for the treatment of selected targets in renal disease (the "GSK Agreement"). The initial collaboration term is currently anticipated to last between two and four years. In connection with the GSK Agreement, GSK identified an initial target for the Company to attempt to identify a potential population of development candidates to address such target under a mutually agreed upon research plan, currently estimated to take 27 months to complete. From the population of identified development candidates, GSK may designate one development candidate in its sole discretion to move forward into clinical development. Once GSK designates a development candidate, GSK would be solely responsible for the development and commercialization activities for that designated development candidate.

At any time during the first two years of the GSK Agreement, GSK has the option to select up to two additional targets, for further research under mutually agreed upon research plans. GSK may then designate one development candidate for each additional target, at which time GSK would have sole responsibility to develop and commercialize each such designated development candidate.

In accordance with the GSK Agreement, a Joint Steering Committee ("JSC") was formed with equal representation from Idera and GSK. The responsibilities of the JSC, include, but are not limited to monitoring the progress of the collaboration, reviewing research plans and dealing with disputes that may arise between the parties. If a dispute cannot be resolved by the JSC, GSK has final decision making authority.

Under the terms of the GSK Agreement, the Company received a $2.5 million upfront, non-refundable, non-creditable cash payment upon the execution of the GSK Agreement. The Company is eligible to receive up to approximately $100 million in license, research, clinical development and commercialization milestone payments. Approximately $9 million of these milestone payments are payable by GSK upon the identification of the additional targets, the completion of current and future research plans and the designation of development candidates. Approximately $89 million is payable by GSK upon the achievement of clinical milestones and commercial milestones. In addition, the Company is eligible to receive royalty payments on sales upon commercialization at varying rates of up to five percent on annual net sales, as defined in the GSK Agreement.

Accounting Analysis

The Company evaluated the GSK Agreement in accordance with the provisions of ASC 605-25. The GSK Agreement contains the following initial deliverables: (i) a collaboration license for Idera's proprietary technology related to the initial target (the "Collaboration License"), (ii) research services (the "Research Services"), and (iii) participation in the JSC (the "JSC Deliverable").

The Company has determined that GSK's options to choose up to two additional targets and to purchase additional collaboration licenses for the Company's proprietary technology related to each additional target are substantive options. GSK is not contractually obligated to exercise the options. Moreover, as a result of the uncertain outcome of the research activities, there is significant uncertainty as to whether GSK will decide to exercise its options for any additional targets. Consequently, the Company is at risk with regard to whether GSK will exercise the options. The Company has determined that GSK's options to choose up to two additional targets and to purchase additional collaboration licenses for the Company's proprietary technology related to each additional target are not priced at a significant and incremental discount.

The Company has concluded that the Collaboration License does not qualify for separation from the Research Services. As it relates to the assessment of standalone value, the Company has determined that GSK cannot fully exploit the value of the Collaboration License without receipt of the Research Services from the Company. The Research Services involve unique skills and specialized expertise, particularly as it relates to the Company's proprietary technology, which is not available in the marketplace. Accordingly, GSK must obtain the Research Services from the Company which significantly limits the ability for GSK to utilize the Collaboration License for its intended purpose on a standalone basis. Therefore, the Collaboration License does not have standalone value from the Research Services. As a result, the Collaboration License and the Research Services have been combined as a single unit of accounting (the R&D Services Unit of Accounting). The Company has concluded that the JSC Deliverable identified at the inception of the arrangement has standalone value from the other deliverables noted based on its nature. Factors considered in this determination included, among other things, the capabilities of the collaborator, whether any other vendor sells the item separately, whether the value of the deliverable is dependent on the other elements in the arrangement, whether there are other vendors that can provide the items and if the customer could use the item for its intended purpose without the other deliverables in the arrangement.

Therefore, the Company has identified two units of accounting in connection with its initial deliverables under the GSK Agreement as follows: (i) the R&D Services Unit of Accounting, and (ii) the JSC Deliverable.

Allocable arrangement consideration at inception of the GSK Agreement is comprised of the up-front payment of $2.5 million, which was allocated to the R&D Services Unit of Accounting. No amount was allocated to the JSC Deliverable because the related best estimate of selling price was determined to be de minimis. The $2.5 million was recorded as deferred revenue in the Company's balance sheet and is being recognized as revenue on a straight line basis as the Research Services are delivered over the estimated 27 month research plan period.

Payments to be received in connection with GSK's identification of additional targets and designation of development candidates are considered substantive options as a result of the uncertainties related to the research, development and commercialization activities, and the uncertainty as to whether GSK will exercise the options. The substantive options are not priced at a significant incremental discount. Accordingly, the substantive options are not considered deliverables at the inception of the arrangement and the associated option exercise payments are not accounted for at inception of the agreement.

The clinical and commercial milestones provided for in the GSK Agreement are all performance obligations of GSK occurring after the Company has completed its obligations. As a result, they represent contingent revenue to the Company and will be accounted for at the time the contingencies are resolved.

The Company will recognize royalty revenue in the period of sale of the related product(s), based on the underlying contract terms, provided that the reported sales are reliably measurable and the Company has no remaining performance obligations, assuming all other revenue recognition criteria are met.

The Company recognized as revenue approximately $0.3 million of deferred revenue related to the GSK Agreement during each of the three months ended March 31, 2017 and 2016. This revenue is classified as alliance revenue in the accompanying statements of operations and comprehensive loss. There was approximately $1.0 million of deferred revenue related to the GSK Agreement at March 31, 2017, all of which is reflected in current portion of deferred revenue in the accompanying balance sheet.

(12) Stock-Based Compensation

The Company recognizes all stock-based payments to employees and directors as expense in the statements of operations and comprehensive loss based on their fair values. The Company records compensation expense over an award's requisite service period, or vesting period, based on the award's fair value at the date of grant. The Company's policy is to charge the fair value of stock options as an expense, adjusted for forfeitures, on a straight-line basis over the vesting period, which is generally four years for employees and three years for directors.

The Company recorded charges in Total operating expense of $1.8 million and $1.7 million in its statements of operations and comprehensive loss for the three months ended March 31, 2017 and 2016, respectively, for stock-based compensation expense attributable to stock-based payments made to employees and directors. The fair value of each option award is estimated on the date of grant using the Black-Scholes option-pricing model. The following weighted average assumptions apply to the options to purchase 3,422,000 and 2,733,750 shares of common stock granted to employees and directors during the three months ended March 31, 2017 and 2016, respectively:

	Three Months Ended March 31,	
	2017	2016
Average risk free interest rate	1.7%	1.5%
Expected dividend yield	—	—
Expected lives (years)	3.9	4.1
Expected volatility	86.9%	93.0%
Weighted average grant date fair value of options granted during the period (per share)	$ 0.99	$ 1.90
Weighted average exercise price of options granted during the period (per share)	$ 1.59	$ 2.86

The expected lives and the expected volatility of the options granted during the three months ended March 31, 2017 and 2016 are based on historical experience. All options granted during the three months ended March 31, 2017 and 2016 were granted at exercise prices equal to the fair market value of the common stock on the dates of grant.

(13) Net Loss per Common Share

For the three months ended March 31, 2017 and 2016, basic and diluted net loss per common share is computed using the weighted average number of shares of common stock outstanding during the period. Diluted net loss per common share is the same as basic net loss per common share as the effects of the Company's potential common stock equivalents are antidilutive. Total antidilutive securities were 72,913,781 and 73,346,318 for the three months ended March 31, 2017 and 2016, respectively, and consist of stock options, preferred stock and warrants.

(14) Employee Stock Purchases

The Company issued common stock as a result of employee stock purchases as follows during the three months ended March 31, 2017 and 2016:

	Three Months Ended March 31, 2017		Three Months Ended March 31, 2016	
(In thousands)	Shares	Proceeds	Shares	Proceeds
Employee stock purchases	42	$ 57	24	$ 36
Total	42	$ 57	24	$ 36

(15) Related Party Transactions

The Company issued 28,385 and 10,690 shares of common stock in lieu of director board and committee fees of approximately $43,000 and $32,000 pursuant to the Company's director compensation program during the three months ended March 31, 2017 and 2016, respectively. The number of shares issued was calculated based on the market closing price of the Company's common stock on the issuance date.

See also Note 17, "Financing" for additional information on related party transactions.

(16) Deferred Tax Assets

The Company's deferred tax assets are determined based on temporary differences between the financial reporting and tax bases of assets and are measured using the enacted tax rates and laws that will be in effect when the differences are expected to reverse. A valuation allowance is recorded against deferred tax assets if it is more likely than not that some portion or all of the deferred tax assets will not be realized. For the three months ended March 31, 2017 and 2016, the Company did not record any current or deferred income tax provisions or benefits. Due to the uncertainty surrounding the future realization of the deferred tax assets, the Company has recorded full valuation allowances against its otherwise recognizable deferred tax assets at March 31, 2017 and December 31, 2016.

(17) Financing

On October 13, 2016, the Company closed a follow-on underwritten public offering, in which it sold 25,000,000 shares of common stock at a price to the public of $2.00 per share for aggregate gross proceeds of $50.0 million. On October 28, 2016, the Company sold an additional 1,225,243 shares of common stock pursuant to the underwriters' 30-day option to purchase additional shares at the public offering price less the underwriting discount. The net proceeds to the Company from the offering, including the exercise by the underwriters of their option to purchase additional shares and after deducting underwriters' discounts and commissions and other offering costs and expenses, were approximately $48.8 million. Investment funds affiliated with Baker Bros. Advisors LP and Pillar Invest Corporation, two of the Company's principal stockholders, and certain members of the Company's board of directors, purchased a total of 5,125,000 shares in this offering at the $2.00 per share purchase price.

(18) Subsequent Events

The Company considers events or transactions that occur after the balance sheet date but prior to the issuance of the financial statements to provide additional evidence relative to certain estimates or to identify matters that require additional disclosure.

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

Overview

We are a clinical-stage biopharmaceutical company focused on the discovery, development and commercialization of novel oligonucleotide therapeutics for oncology and rare diseases. We use two distinct proprietary drug discovery technology platforms to design and develop drug candidates: our Toll-like receptor, or TLR, targeting technology and our third-generation antisense, or 3GA, technology. We developed these platforms based on our scientific expertise and pioneering work with synthetic oligonucleotides as therapeutic agents. Using our TLR targeting technology, we design synthetic oligonucleotide-based drug candidates to modulate the activity of specific TLRs. In addition, using our 3GA technology, we are developing drug candidates to turn off the messenger RNA, or mRNA, associated with disease causing genes. We believe that our 3GA technology may potentially reduce the immunotoxicity and increase the potency of earlier generation antisense and RNA interference, or RNAi, technologies.

Our business strategy is focused on the clinical development of drug candidates for oncology and rare diseases characterized by small, well-defined patient populations with serious unmet medical needs. We believe we can develop and commercialize these targeted therapies on our own. To the extent we seek to develop drug candidates for broader disease indications, we may explore potential collaborative alliances to support development and commercialization.

TLR Modulation Technology Platform

TLRs are key receptors of the immune system and play a role in innate and adaptive immunity. As a result, we believe TLRs are potential therapeutic targets for the treatment of a broad range of diseases. Using our chemistry-based platform, we have designed TLR agonists and antagonists to act by modulating the activity of targeted TLRs. A TLR agonist is a compound that stimulates an immune response through the targeted TLR. A TLR antagonist is a compound that inhibits an immune response by blocking the targeted TLR.

Our TLR agonist lead drug candidate IMO-2125 is an agonist of TLR9. Our TLR antagonist lead drug candidate is IMO-8400, which is an antagonist of TLR7, TLR8 and TLR9.

We are evaluating IMO-2125 for the treatment by intra-tumoral injection of multiple oncology indications both in combination with checkpoint inhibitors and as monotherapy. We are developing IMO-8400 for the treatment of a rare disease called dermatomyositis.

Intra-tumoral IMO-2125 Development Program in Immuno-oncology

Advancements in cancer immunotherapy have included the approval and late-stage development of multiple checkpoint inhibitors, which are therapies that target mechanisms by which tumor cells evade detection by the immune system. Despite these advancements, many patients fail to respond to these therapies. For instance, approximately fifty percent of patients with melanoma fail to respond to therapy with approved checkpoint inhibitors. Current published data suggests that the lack of response to checkpoint inhibition is related to a non-immunogenic tumor micro environment. Because TLR9 agonists stimulate the immune system, we believe that there is a scientific rationale to evaluate the combination of intra-tumoral injection of our TLR9 agonists with checkpoint inhibitors. Specifically, we believe that intra-tumoral injection of our TLR9 agonists activates a local immune response in the injected tumor, which may complement the effect of the systemically administered checkpoint inhibitors. In studies in preclinical cancer models conducted in our laboratories, intra-tumoral injection of TLR9 agonists has potentiated the anti-tumor activity of multiple checkpoint inhibitors in multiple tumor models. These data have been presented at a number of scientific conferences from 2014 through 2016. We believe that these data support evaluation of combination regimens including the combination of a TLR9 agonist and a checkpoint inhibitor for the treatment of cancer.

We are initially developing IMO-2125 for use in combination with checkpoint inhibitors for the treatment of patients with anti-PD1 refractory metastatic melanoma. We believe, based on internally conducted commercial research, that in the United States, by 2025, approximately 20,000 people will have metastatic melanoma and approximately 13,000 of those people will have metastatic melanoma that is anti-PD1 refractory. We also believe that TLR9 agonists may be useful in other tumor types that are unaddressable with current immunotherapy due in part to low mutation load and low dendritic cell infiltration, which include non-small cell lung cancer, head and neck cancer, renal cell cancer and bladder cancer. We believe, based on internally conducted commercial research, that in the United States, by 2025, approximately

160,000 people will have tumor types that are addressable with current immunotherapy and approximately 70,000 of those people will have tumor types that are anti-PD1 refractory.

In June 2015, we entered into a strategic research alliance with the University of Texas, MD Anderson Cancer Center, or MD Anderson, to commence clinical development of IMO-2125 in combination with checkpoint inhibitors. In December 2015, we initiated a Phase 1/2 clinical trial to assess the safety and efficacy of IMO-2125, administered intra-tumorally, in combination with ipilimumab, a CTLA4 antibody marketed as Yervoy® by Bristol-Myers Squibb Company, in patients with metastatic melanoma (refractory to treatment with a PD1 inhibitor, also referred to as anti-PD1 refractory). We subsequently amended the trial protocol to enable an additional arm to study the combination of IMO-2125 with pembrolizumab, an anti-PD1 antibody marketed as Keytruda® by Merck & Co. in the same patient population. In the Phase 1 portion of this clinical trial, escalating doses of IMO-2125 ranging from 4 mg through 32 mg in the ipilimumab arm and ranging from 8 mg through 32 mg in the pembrolizumab arm are being administered intra-tumorally into a selected tumor lesion, together with the standard dosing regimen of ipilimumab or pembrolizumab, administered intravenously. The primary objectives of the Phase 1 portion of the trial include characterizing the safety of the combinations and determining the recommended Phase 2 dose. A secondary objective of the Phase 1 portion of the trial is describing the anti-tumor activity of IMO-2125 when administered intra-tumorally in combination with ipilimumab or pembrolizumab. The primary objectives of the Phase 2 portion of the trial will be to characterize the safety of the combinations and determine the activity of the combinations utilizing immune-related response criteria. Additionally, a secondary objective of the Phase 2 portion of the trial will be to assess treatment response using traditional RECIST criteria. Serial biopsies will be taken of selected injected and non-injected tumor lesions to assess immune changes and response assessments. We anticipate that the entire Phase 1/2 trial may enroll approximately 60 to 80 patients across both ipilimumab and pembrolizumab arms.

In September 2016, we disclosed early clinical results from the 4 mg and 8 mg dosing cohorts of the Phase 1 ipilimumab combination portion of the trial in which three of six evaluable patients demonstrated clinical responses (one complete response and two partial responses). We also disclosed that the drug was well tolerated through the initial dosing of the 16 mg dosing cohort. We have completed enrollment in the dose escalation phase in the ipilimumab arm of the trial as well as the 8 mg dosing cohort in the pembrolizumab arm of the trial. We presented available translational, efficacy and safety data findings from the 4 mg, 8 mg and 16 mg dosing cohorts in the ipilimumab arm during an oral presentation at the Society for Immunotherapy of Cancer (SITC) Annual Meeting in November 2016. In February 2017, we provided a further update in a poster session at the joint meeting of the American Society of Clinical Oncology (ASCO)-SITC Meeting where we disclosed that the drug was well tolerated through the initial dosing of the 32mg dosing cohort in the ipilimumab arm as well as through the initial dosing of the 8mg cohort in the pembrolizumab arm.

In April 2017, we initiated enrollment in the Phase 2 portion of the trial with the 8mg dose of intratumoral IMO-2125. The Phase 2 portion of the trial utilizes a Simon two-stage design to evaluate the objective response rate of IMO-2125 in combination with ipilimumab, compared to historical data for ipilimumab alone in the anti-PD-1 refractory metastatic melanoma population. The ipilimumab arm of IMO-2125-204 has already met the pre-specified futility assessment to advance immediately into the second stage of the Phase 2 portion of the trial given that two patients treated at the Phase 2 dose experienced confirmed responses, including one complete response. We anticipate that the Phase 2 portion of the trial will enroll a total of 21 patients dosed at the 8mg dose, of which nine were already enrolled as of April 11, 2017. The MD Anderson Cancer Center will continue to lead the trial and will be joined by additional centers.

Additionally, the Phase 1 dose escalation of IMO-2125 in combination with pembrolizumab is ongoing and we initiated a Phase 1 trial with IMO-2125 administered as a single agent intra-tumorally in multiple tumor types. We are also planning to initiate a Phase 2 clinical trial with IMO-2125 administered intra-tumorally together with other checkpoint inhibitors in multiple tumor types.

IMO-8400 in Rare Diseases

We have initiated clinical development of IMO-8400 for the treatment of rare diseases. We have selected dermatomyositis as the first rare disease for which we are developing IMO-8400. We selected this indication for development based on the reported increase in TLR expression in this disease state, expression of cytokines indicative of key TLR-mediated pathways and the presence of auto-antibodies that can induce TLR-mediated immune responses.

We considered that multiple independent research studies across a broad range of autoimmune diseases, including both dermatomyositis and psoriasis, have demonstrated that the over-activation of TLRs plays a critical role in disease maintenance and progression. In autoimmune diseases, endogenous nucleic acids released from damaged or dying cells initiate signaling cascades through TLRs, leading to the induction of multiple pro-inflammatory cytokines. This inflammation causes further damage to the body's own tissues and organs and the release of more self-nucleic acids, creating a self-sustaining autoinflammatory cycle that contributes to chronic inflammation in the affected tissue, promoting disease progression.

We believe that we demonstrated proof of concept for our approach of using TLRs to inhibit the over-activation of specific TLRs for the treatment of psoriasis and potentially other autoimmune diseases in a randomized, double-blind, placebo-controlled Phase 2 clinical trial of IMO-8400 that we conducted in patients with moderate to severe plaque psoriasis, a well-characterized autoimmune disease. In this trial, we evaluated IMO-8400 at four subcutaneous dose levels of 0.075 mg/kg, 0.15 mg/kg, 0.3 mg/kg, and 0.6 mg/kg, versus placebo, administered once weekly for 12 weeks in 46 patients. The trial met its primary objective as IMO-8400 was well tolerated at all dose levels with no treatment-related discontinuations, treatment-related serious adverse events or dose reductions. The trial also met its secondary objective of demonstrating clinical activity in psoriasis patients, as assessed by the Psoriasis Area Severity Index.

Dermatomyositis is a rare, debilitating, inflammatory muscle and skin disease associated with significant morbidity, decreased quality of life and an increased risk of premature death. While the cause of dermatomyositis is not well understood, the disease process involves immune system attacks against muscle and skin that lead to inflammation and tissue damage. Major symptoms can include progressive muscle weakness, severe skin rash, calcium deposits under the skin (calcinosis), difficulty swallowing (dysphagia) and interstitial lung disease. We believe, based on internally conducted commercial research, that dermatomyositis affects approximately 25,000 people in the United States, and is about twice as common in women as men, with a typical age of onset between 45 and 65 years in adults. Dermatomyositis represents one form of myositis, a spectrum of inflammatory muscle diseases that also includes juvenile dermatomyositis, polymyositis and inclusion body myositis.

In December 2015, we initiated a Phase 2, randomized, double-blind, placebo-controlled clinical trial designed to assess the safety, tolerability and treatment effect of IMO-8400 in adult patients with dermatomyositis. Eligibility criteria include evidence of active skin involvement. Patients in the trial are randomized to one of three groups to receive once weekly subcutaneous injections of: placebo, 0.6 mg/kg of IMO-8400 or 1.8 mg/kg of IMO-8400, in each case, for a period of 24 weeks. The trial is expected to enroll approximately 36 patients and is being conducted at approximately 22 centers in the United States, the United Kingdom, Hungary and Sweden. The primary efficacy endpoint is the change from baseline in the Cutaneous Dermatomyositis Disease Area and Severity Index (CDASI), a validated outcome measure of skin disease. Additional exploratory endpoints include muscle strength and function (which are among the International Myositis Assessment & Clinical Studies Group (IMACS) core set measures), patient-reported quality of life and biochemical markers of disease activity.

Third-generation Antisense (3GA)

Third-generation Antisense (3GA) Technology to Target mRNA

We are developing our 3GA technology to "turn off" the mRNA associated with disease causing genes. We have designed 3GA oligonucleotides to specifically address challenges associated with earlier generation antisense and RNAi technologies.

Our focus is on creating 3GA candidates targeted to specific genes to treat cancer and rare diseases. Our key considerations in identifying disease indications and gene targets in our 3GA program include: strong evidence that the disease is caused by a specific protein; clear criteria to identify a target patient population; biomarkers for early assessment of clinical proof of concept; a targeted therapeutic mechanism of action; unmet medical need to allow for a rapid development path to approval and commercial opportunity. To date, we have created 22 novel 3GA compounds for specific gene targets that are potentially applicable across a wide variety of therapeutic areas. These areas include rare diseases, oncology, autoimmune disorders, metabolic conditions, single point mutations and others. Our current activities with respect to these compounds range from cell culture through investigational new drug, or IND, application-enabling toxicology.

In January 2017, we announced that we had selected our first candidate to enter clinical development. We are planning to develop IDRA-008 for a well-established liver target with available pre-clinical animal models and well-known clinical endpoints. IDRA-008 has potential for both broad and rare disease applications.

In November 2015, we entered into a collaboration and license agreement with GlaxoSmithKline Intellectual Property Development Limited, or GSK, to license, research, develop and commercialize pharmaceutical compounds from our 3GA technology for the treatment of selected targets in renal disease, which agreement we refer to as the GSK Agreement. Under this collaboration, we are creating multiple development candidates to address the initial target designated by GSK. From the population of identified development candidates, GSK may designate one development candidate in its sole discretion to move forward into clinical development. Once GSK designates a development candidate, GSK would be solely responsible for the development and commercialization activities for that designated development candidate.

Additional Programs

IMO-9200 for Autoimmune Disease. We have developed a second novel synthetic oligonucleotide antagonist of TLR7, TLR8, and TLR9, IMO-9200, as a drug candidate for potential use in selected autoimmune disease indications. In 2015, we completed a Phase 1 clinical trial of IMO-9200 in healthy subjects as well as additional preclinical studies of IMO-9200 for autoimmune diseases. In 2015, we determined not to proceed with the development of IMO-9200 because the large autoimmune disease indications for which IMO-9200 had been developed did not fit within the strategic focus of our company. In November 2016, we entered into an exclusive license and collaboration agreement with Vivelix Pharmaceuticals, Ltd., or Vivelix, granting Vivelix worldwide rights to develop and market IMO-9200 for non-malignant gastrointestinal disorders, which agreement we refer to as the Vivelix Agreement.

IMO-8400 for B-Cell Lymphomas. In December 2013, we initiated a Phase 1/2 clinical trial of IMO-8400 in patients with Waldenström's macroglobulinemia, and in March 2014, we initiated a Phase 1/2 clinical trial of IMO-8400 in diffuse large B-cell lymphoma, or DLBCL, harboring the MYD88 L265P oncogenic mutation.

In September 2016, we announced that we had suspended internal development of IMO-8400 for B-cell lymphomas, including our ongoing trials in Waldenström's macroglobulinemia and DLBCL. We are exploring strategic alternatives for IMO-8400 in these indications. This decision was based upon our prioritization of the clinical development plans for IMO-2125 and our assessment that the level of clinical activity seen in the Waldenström's macroglobulinemia trial would not support the development of IMO-8400 for these indications as a monotherapy, the very slow enrollment rate in DLBCL and our commercial assessment. The trial of IMO-8400 in DLBCL is now closed. We plan to finish treating patients in the trial of IMO-8400 in Waldenström's macroglobulinemia but enrollment of new patients has been suspended. In these trials under our B-cell lymphoma program, IMO-8400 was generally well tolerated at all dose levels evaluated, with only one treatment-related discontinuation due to adverse events and no dose reductions. The treatment-related discontinuation involved a single patient who experienced a serious adverse event that was possibly related to IMO-8400.

In October 2016, we presented interim clinical data from the Phase 1/2 clinical trial of IMO-8400 in Waldenström's macroglobulinemia, which showed signals of positive clinical activity as well as safety in the first four dosing cohorts of the trial.

Collaborative Alliances

We may explore potential collaborative alliances to support development and commercialization of our TLR agonists and antagonists. We may also seek to enter into additional collaborative alliances with pharmaceutical companies with respect to applications of our 3GA program. We are currently party to collaborations with Vivelix, GSK, Abbott Molecular, and Merck & Co.

Accumulated Deficit

As of March 31, 2017, we had an accumulated deficit of $553.6 million. We expect to incur substantial operating losses in future periods. We do not expect to generate product revenue, sales-based milestones or royalties from our development programs until we successfully complete development and obtain marketing approval for drug candidates, either alone or in collaborations with third parties, which we expect will take a number of years. In order to commercialize our drug candidates, we need to complete clinical development and comply with comprehensive regulatory requirements.

CRITICAL ACCOUNTING POLICIES AND ESTIMATES

This management's discussion and analysis of financial condition and results of operations is based on our financial statements, which have been prepared in accordance with accounting principles generally accepted in the United States. The preparation of these financial statements requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and the disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. On an ongoing basis, management evaluates its estimates and judgments, including those related to stock-based compensation. Management bases its estimates and judgments on historical experience and on various other factors that are believed to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates under different assumptions or conditions.

We regard an accounting estimate or assumption underlying our financial statements as a "critical accounting estimate" where:

- the nature of the estimate or assumption is material due to the level of subjectivity and judgment necessary to account for highly uncertain matters or the susceptibility of such matters to change; and

- the impact of the estimates and assumptions on financial condition or operating performance is material.

Our significant accounting policies are described in Note 2 of the notes to our financial statements in our Annual Report on Form 10-K for the year ended December 31, 2016. Not all of these significant policies, however, fit the definition of critical accounting policies and estimates. We believe that our accounting policies relating to revenue recognition, stock-based compensation and research and development prepayments, accruals and related expenses, as described under the caption "Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations — Critical Accounting Policies and Estimates" in our Annual Report on Form 10-K for the year ended December 31, 2016, fit the description of critical accounting estimates and judgments. There were no changes in these policies during the three months ended March 31, 2017.

RESULTS OF OPERATIONS

Three Months Ended March 31, 2017 and 2016

Alliance Revenue

Alliance revenue increased $0.1 million in the three months ended March 31, 2017, as compared to the three months ended March 31, 2016. In November 2015, in connection with the execution of the GSK Agreement, we received a $2.5 million upfront payment that we recorded as deferred revenue. We are recognizing this deferred revenue as revenue on a straight line basis over the anticipated 27-month performance period under the GSK Agreement. Accordingly, we recognized approximately $0.3 million of alliance revenue related to the GSK Agreement during the three months ended March 31, 2017 and 2016. The $0.1 million increase in revenue resulted additional services provided for under GSK Agreement, offset by lower reimbursements by licensees of costs associated with patent maintenance.

Research and Development Expenses

Research and development expenses increased by $2.2 million or 24%, from $9.3 million for the three months ended March 31, 2016, to $11.5 million for the three months ended March 31, 2017. In the following table, research and development expenses are set forth in the following five categories which are discussed beneath the table:

(in thousands)	Three months ended March 31,		Percentage Increase (Decrease)
	2017	2016	
IMO-2125 external development expense	$ 2,395	$ 1,174	104 %
IMO-8400 external development expense	2,429	2,138	14 %
IMO-9200 external development expense	4	206	(98)%
Other drug development expense	4,066	3,152	29 %
Basic discovery expense	2,591	2,626	(1)%
	$ 11,485	$ 9,296	24 %

IMO-2125 External Development Expenses. These expenses include external expenses that we have incurred in connection with the development of IMO-2125 as part of our immuno-oncology program. These external expenses include payments to independent contractors and vendors for drug development activities conducted after the initiation of IMO-2125 clinical development in immuno-oncology, but exclude internal costs such as payroll and overhead expenses. We commenced clinical development of IMO-2125 as part of our immuno-oncology program in July 2015 and from July 2015 through March 31, 2017 we incurred approximately $7.8 million in IMO-2125 external development expenses as part of our immuno-oncology program, including costs associated with the preparation for and conduct of the ongoing Phase 1/2 clinical trial being conducted under our research alliance with MD Anderson to assess the safety and efficacy of IMO-2125 in combination with ipilimumab and with pembrolizumab in patients with metastatic melanoma, the manufacture of additional drug substance for use in our clinical trials and additional nonclinical studies. The $7.8 million in IMO-2125 external development expenses excludes costs incurred prior to July 2015 with respect to IMO-2125, including costs incurred for the development of IMO-2125 for the treatment of patients with chronic hepatitis C virus which we discontinued in the third quarter of 2011.

The increase in our IMO-2125 external development expenses in the three months ended March 31, 2017, as compared to the three months ended March 31, 2016, was primarily due to increases in costs associated with the design and planning for additional clinical trials of IMO-2125 and continued Phase 1/2 clinical trials, partially offset by lower drug manufacturing costs.

We expect our IMO-2125 external development expenses to increase during 2017, as compared to 2016, as we plan to continue our Phase 1/2 clinical trial being conducted under our research alliance with MD Anderson to assess the safety and efficacy of IMO-2125 in combination with ipilimumab and with pembrolizumab in patients with metastatic melanoma, conduct clinical trials of IMO-2125, work on the design and planning for additional clinical trials of IMO-2125 and develop our strategy to optimize IMO-2125, and continue manufacturing activities and nonclinical studies.

IMO-8400 External Development Expenses. These expenses include external expenses that we have incurred in connection with IMO-8400 since October 2012, when we commenced clinical development of IMO-8400. These

external expenses include payments to independent contractors and vendors for drug development activities conducted after the initiation of IMO-8400 clinical development but exclude internal costs such as payroll and overhead expenses. Since October 2012, we have incurred approximately $36.6 million in IMO-8400 external development expenses through March 31, 2017, including costs associated with our Phase 1 clinical trial in healthy subjects; our Phase 2 clinical trial in patients with psoriasis; preparation for and conduct of our Phase 1/2 clinical trial in patients with Waldenström's macroglobulinemia and our Phase 1/2 clinical trial in patients with DLBCL harboring the MYD88 L265P oncogenic mutation, which we discontinued in September 2016; the preparation for and conduct of our ongoing Phase 2 clinical trial in patients with dermatomyositis; the manufacture of additional drug substance for use in our clinical trials; and expenses associated with our collaboration with Abbott Molecular for the development of a companion diagnostic for identification of patients with B-cell lymphoma harboring the MYD88 L265P oncogenic mutation.

The increase in our IMO-8400 external development expenses in the three months ended March 31, 2017, as compared to three months ended March 31, 2016, was primarily due to increases related to our ongoing Phase 2 clinical trial of IMO-8400 in patients with dermatomyositis, partially offset by lower spend on awareness and education.

We expect our IMO-8400 external development expenses during 2017 to be similar to 2016. In September 2016, we announced that we had suspended the internal clinical development of IMO-8400 for B-cell lymphomas, including our trials in Waldenström's macroglobulinemia and DLBCL. We are exploring strategic alternatives for IMO-8400 in these indications. We expect to continue to incur costs associated with IMO-8400 as we continue our ongoing Phase 2 clinical trial of IMO-8400 in patients with dermatomyositis, finish treating enrolled patients in our clinical trial of IMO-8400 in Waldenström's macroglobulinemia and wind down our clinical development of IMO-8400 in Waldenström's macroglobulinemia and DLBCL.

IMO-9200 External Development Expenses. These expenses include external expenses that we have incurred in connection with IMO-9200 since October 2014, when we commenced clinical development of IMO-9200. These external expenses include payments to independent contractors and vendors for drug development activities conducted after the initiation of IMO-9200 clinical development but exclude internal costs such as payroll and overhead expenses. We have incurred approximately $4.6 million in IMO-9200 external development expenses from October 2014 through March 31, 2017 including costs associated with our Phase 1 clinical trial in healthy subjects, the manufacture of additional drug substance for use in our clinical and nonclinical trials and additional nonclinical studies. We classified the IMO-9200 external development expenses incurred prior to October 2014 in other drug development expenses.

The decrease in IMO-9200 external development expenses in the three months ended March 31, 2017, as compared to three months ended March 31, 2016, reflects lower spending on manufacturing and nonclinical toxicology studies during the three months ended March 31, 2017. We expect our IMO-9200 external development expenses to decrease during 2017, as compared to 2016, as in September 2016, we determined not to proceed with the development of IMO-9200 and, in November 2016, we entered into the Vivelix Agreement, granting Vivelix worldwide rights to develop and market IMO-9200 for non-malignant gastrointestinal disorders.

Other Drug Development Expenses. These expenses include external expenses associated with preclinical development of identified compounds in anticipation of advancing these compounds into clinical development. In addition, these expenses include internal costs, such as payroll and overhead expenses, associated with preclinical development and products in clinical development. The external expenses associated with preclinical compounds include payments to contract vendors for manufacturing and the related stability studies, preclinical studies, including animal toxicology and pharmacology studies, and professional fees. Other drug development expenses also include costs associated with compounds that were previously being developed but are not currently being developed.

The increase in other drug development expenses in the three months ended March 31, 2017, as compared to three months ended March 31, 2016, was primarily due to the external costs of preclinical programs and awareness and education programs, partially offset by lower consulting costs during the three months ended March 31, 2016.

Basic Discovery Expenses. These expenses include our internal and external expenses relating to our discovery efforts with respect to our TLR-targeted programs, including agonists and antagonists of TLR3, TLR7, TLR8 and TLR9, and our 3GA program. These expenses reflect payments for laboratory supplies, external research, and professional fees, as well as payroll and overhead expenses.

The decrease in basic discovery expenses in the three months ended March 31, 2017, as compared to three months ended March 31, 2016, was primarily due to lower overhead expenses.

We do not know if we will be successful in developing any drug candidate from our research and development programs. At this time, and without knowing the results from our ongoing clinical trial of IMO-8400, our ongoing clinical trial of IMO-2125, and our ongoing development of compounds in our 3GA program, we cannot reasonably estimate or know the nature, timing, and costs of the efforts that will be necessary to complete the remainder of the development of, or the period, if any, in which material net cash inflows may commence from, any drug candidate from our research and development programs. Moreover, the clinical development of any drug candidate from our research and development programs is subject to numerous risks and uncertainties associated with the duration and cost of clinical trials, which vary significantly over the life of a project as a result of unanticipated events arising during clinical development.

General and Administrative Expenses

General and administrative expenses consist primarily of payroll, stock-based compensation expense, consulting fees and professional legal fees associated with our patent applications and maintenance, our corporate regulatory filing requirements, our corporate legal matters, and our business development initiatives.

General and administrative expenses increased by approximately $0.2 million, or 4%, from $3.9 million in the three months ended March 31, 2016 to $4.1 million in the three months ended March 31, 2017. The increase in general and administrative expenses was primarily due to increases in patent preparation fees and commercial research costs.

We expect general and administrative expenses to increase during 2017, as compared to 2016, due to additional headcount to support our drug development programs.

Interest Income

Interest income increased by $33,000 from $120,000 in the three months ended March 31, 2016 to $153,000 in the three months ended March 31, 2017, primarily due to fluctuations of investment balances in the three months ended March 31, 2017 and 2016, which were impacted by the investment of funds obtained from our follow-on underwritten public offering in October 2016, offset by general spending.

Interest Expense

Interest expense decreased during the three months ended March 31, 2017, as compared to the three months ended March 31, 2016, primarily due to a decrease in the outstanding principal amount of our note under our loan and security agreement with Oxford Finance LLC.

Net Loss

As a result of the factors discussed above, our net loss was $15.1 million for the three months ended March 31, 2017, compared to $12.8 million for the three months ended March 31, 2016. Since January 1, 2001, we have primarily been involved in the development of our TLR pipeline. From January 1, 2001 through March 31, 2017, we incurred losses of $293.4 million. We also incurred net losses of $260.2 million prior to December 31, 2000 during which time we were primarily involved in the development of earlier generation antisense technology. Since our inception, we had an accumulated deficit of $553.6 million through March 31, 2017. We expect to continue to incur substantial operating losses in the future.

LIQUIDITY AND CAPITAL RESOURCES

Sources of Liquidity

We require cash to fund our operating expenses and to make capital expenditures. Historically, we have funded our cash requirements primarily through the following:

- sale of common stock, preferred stock and warrants;

- exercise of warrants;
- debt financing, including capital leases;
- license fees, research funding and milestone payments under collaborative and license agreements; and
- interest income.

We have an effective shelf registration statement on Form S-3 that permits us to offer and sell, as of April 28, 2017, up to an additional $61.3 million of securities in one or more offerings.

Cash Flows

Three Months Ended March 31, 2017

As of March 31, 2017, we had approximately $91.3 million in cash, cash equivalents and investments, a net decrease of approximately $17.8 million from December 31, 2016.

Net cash used in operating activities totaled $17.6 million during the three months ended March 31, 2017, reflecting our $15.1 million net loss for the period, as adjusted for non-cash income and expenses, including stock-based compensation, depreciation and amortization expense and accretion of investment premiums. Net cash used in operating activities also reflects changes in our prepaid expenses, accounts payable, accrued expenses and other liabilities and the recognition of deferred revenue.

The $16.7 million net cash provided by investing activities during the three months ended March 31, 2017 reflects proceeds from the maturity of $16.7 million of available-for-sale securities, which are investments that we do not have the positive intent to hold to maturity at the time of purchase, partially offset by payments for the purchase of $30,000 in property and equipment.

The $17,000 net cash used in financing activities during the three months ended March 31, 2017 reflects $70,000 in payments on our note payable, partially offset by $57,000 in net proceeds from employee stock purchases under our 1995 Employee Stock Purchase Plan, or ESPP and $4,000 of payments on capital leases.

Three Months Ended March 31, 2016

As of March 31, 2016, we had approximately $74.1 million in cash, cash equivalents and investments, a net decrease of approximately $13.0 million from December 31, 2015.

Net cash used in operating activities totaled $12.9 million during the three months ended March 31, 2016, reflecting our $12.8 million net loss, as adjusted for non-cash income and expenses, including stock-based compensation, depreciation and amortization expense and accretion of investment premiums. Net cash used in operating activities also reflects changes in our prepaid expenses, accounts payable, accrued expenses and other liabilities and the recognition of deferred revenue.

The $8.2 million net cash provided by investing activities during the three months ended March 31, 2016 reflects the purchase of $2.9 million of available-for-sale securities, which are investments that we do not have the positive intent to hold to maturity at the time of purchase, proceeds from the maturity of $9.2 million of available-for-sale securities, proceeds from the sale of $2.0 million of available-for-sale securities, and payments for the purchase of $90,000 in property and equipment.

The $29,000 net cash used in financing activities during the three months ended March 31, 2016 reflects $36,000 in net proceeds from employee stock purchases under our ESPP and $63,000 in payments on our note payable.

Funding Requirements

We have incurred operating losses in all fiscal years since our inception except 2002, 2008 and 2009, and we had an accumulated deficit of $553.6 million at March 31, 2017. We expect to incur substantial operating losses in future

periods. These losses, among other things, have had and will continue to have an adverse effect on our stockholders' equity, total assets and working capital. We have received no revenues from the sale of drugs. As of April 28, 2017, substantially all of our revenues have been from collaboration and license agreements. We have devoted substantially all of our efforts to research and development, including clinical trials, and we have not completed development of any drugs. Because of the numerous risks and uncertainties associated with developing drugs, we are unable to predict the extent of any future losses, whether or when any of our products will become commercially available or when we will become profitable, if at all.

We do not expect to generate significant additional funds internally until we successfully complete development and obtain marketing approval for products, either alone or in collaboration with third parties, which we expect will take a number of years. In addition, we have no committed external sources of funds.

We had cash, cash equivalents and investments of approximately $91.3 million at March 31, 2017. We believe that, based on our current operating plan, our existing cash, cash equivalents and investments will enable us to fund our operations into the second quarter of 2018. Specifically, we believe that our available funds will be sufficient to enable us to:

- participate in an FDA End-of-Phase 1 meeting to obtain FDA feedback on the regulatory pathway for IMO-2125;
- complete our ongoing Phase 1/2 clinical trial of IMO-2125 in combination with ipilimumab or pembrolizumab in anti-PD1 refractory metastatic melanoma and complete enrollment in the Phase 2 portion of this trial;
- prepare for the initiation of a pivotal Phase 3 clinical trial of IMO-2125 in combination with a checkpoint inhibitor for the treatment of anti-PD1 refractory metastatic melanoma;
- initiate a Phase 1 intra-tumoral monotherapy clinical trial of IMO-2125 in multiple refractory tumor types;
- initiate a Phase 2 multi-arm clinical trial of IMO-2125 in combination with a checkpoint inhibitor in multiple refractory tumor types;
- complete our ongoing Phase 2 clinical trial of IMO-8400 in patients with dermatomyositis; and
- submit an IND and initiate a Phase 1 human clinical proof-of-concept trial of IDRA-008.

We expect that we will need to raise additional funds in order to conduct any other clinical development of our TLR drug candidates or to conduct any other development of our 3GA technology, and to fund our operations. We are seeking and expect to continue to seek additional funding through collaborations, the sale or license of assets or financings of equity or debt securities. We believe that the key factors that will affect our ability to obtain funding are:

- the results of our clinical and preclinical development activities in our rare disease program, our immuno-oncology program and our 3GA program, and our ability to advance our drug candidates and 3GA technology on the timelines anticipated;
- the cost, timing, and outcome of regulatory reviews;
- competitive and potentially competitive products and technologies and investors' receptivity to our drug candidates and the technology underlying them in light of competitive products and technologies;
- the receptivity of the capital markets to financings by biotechnology companies generally and companies with drug candidates and technologies such as ours specifically; and
- our ability to enter into additional collaborations with biotechnology and pharmaceutical companies and the success of such collaborations.

In addition, increases in expenses or delays in clinical development may adversely impact our cash position and require additional funds or cost reductions.

Financing may not be available to us when we need it or may not be available to us on favorable or acceptable terms or at all. We could be required to seek funds through collaborative alliances or through other means that may require us to relinquish rights to some of our technologies, drug candidates or drugs that we would otherwise pursue on our own.

In addition, if we raise additional funds by issuing equity securities, our then existing stockholders will experience dilution. The terms of any financing may adversely affect the holdings or the rights of existing stockholders. An equity financing that involves existing stockholders may cause a concentration of ownership. Debt financing, if available, may involve agreements that include covenants limiting or restricting our ability to take specific actions, such as incurring additional debt, making capital expenditures or declaring dividends, and are likely to include rights that are senior to the holders of our common stock. Any additional debt or equity financing may contain terms which are not favorable to us or to our stockholders, such as liquidation and other preferences, or liens or other restrictions on our assets. As discussed in Note 10 to the financial statements appearing in our Annual Report on Form 10-K for the year ended December 31, 2016 that was filed with the SEC, additional equity financings may also result in cumulative changes in ownership over a three-year period in excess of 50% which would limit the amount of net operating loss and tax credit carryforwards that we may utilize in any one year.

If we are unable to obtain adequate funding on a timely basis or at all, we will be required to terminate, modify or delay preclinical or clinical trials of one or more of our drug candidates, significantly curtail or terminate discovery or development programs for new drug candidates or relinquish rights to portions of our technology, drug candidates and/or products.

Contractual Obligations

During the three months ended March 31, 2017, there were no material changes outside the ordinary course of our business to our contractual obligations as disclosed in our Annual Report on Form 10-K for the year ended December 31, 2016.

Off-Balance Sheet Arrangements

As of March 31, 2017, we had no off-balance sheet arrangements.

New Accounting Pronouncements

New accounting pronouncements are discussed in Note 2 in the notes to the financial statements in this Quarterly Report on Form 10-Q.

ITEM 3. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK.

As of March 31, 2017, all material assets and liabilities are in U.S. dollars, which is our functional currency.

We maintain investments in accordance with our investment policy. The primary objectives of our investment activities are to preserve principal, maintain proper liquidity to meet operating needs and maximize yields. Although our investments are subject to credit risk, our investment policy specifies credit quality standards for our investments and limits the amount of credit exposure from any single issue, issuer or type of investment. We regularly review our investment holdings in light of the then current economic environment. At March 31, 2017, all of our invested funds were invested in two money market funds, classified in cash and cash equivalents on the accompanying balance sheet, corporate bonds, municipal bonds and commercial paper classified in short-term investments, and corporate bonds and municipal bonds classified in long-term investments.

Based on a hypothetical ten percent adverse movement in interest rates, the potential losses in future earnings, fair value of risk sensitive financial instruments, and cash flows are immaterial, although the actual effects may differ materially from the hypothetical analysis.

ITEM 4. CONTROLS AND PROCEDURES.

(a) *Evaluation of Disclosure Controls and Procedures.* Our management, with the participation of our principal executive officer and principal financial officer, evaluated the effectiveness of our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act) as of March 31, 2017. In designing and evaluating our disclosure controls and procedures, management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving their objectives and our management necessarily applied its judgment in evaluating the cost-benefit relationship of possible controls and procedures. Based on this evaluation, our principal executive officer and principal financial officer concluded that as of March 31, 2017, our disclosure controls and procedures were (1) designed to ensure that material information relating to us is made known to our principal executive officer and principal financial officer by others, particularly during the period in which this report was prepared, and (2) effective, in that they provide reasonable assurance that information required to be disclosed by us in the reports we file or submit under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms.

(b) *Changes in Internal Controls*. No change in our internal control over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act) occurred during the fiscal quarter ended March 31, 2017 that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

PART II — OTHER INFORMATION

ITEM 1A. RISK FACTORS.

RISK FACTORS

Investing in our securities involves a high degree of risk. You should carefully consider the risks and uncertainties described below in addition to the other information included or incorporated by reference in this Annual Report on Form 10-K before purchasing our common stock. Our business, financial condition and results of operations could be materially and adversely affected by any of these and currently unknown risks or uncertainties. In that case, the market price of our common stock could decline, and you may lose all or part of your investment in our securities.

ITEM 6. EXHIBITS.

The list of Exhibits filed as part of this Quarterly Report on Form 10-Q is set forth on the Exhibit Index immediately preceding such Exhibits and is incorporated herein by this reference.

SIGNATURES

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

IDERA PHARMACEUTICALS, INC.

Date: May 4, 2017

/s/ Vincent J. Milano

Vincent J. Milano
President and Chief Executive Officer
(Principal Executive Officer)

Date: May 4, 2017

/s/ Louis J. Arcudi, III

Louis J. Arcudi, III
Chief Financial Officer
(Principal Financial and Accounting Officer)

Exhibit Index

Exhibit No.	
10.1	Form of Director and Officer Indemnification Agreement.
10.2	Form of Executive Severance and Change of Control Agreement.
31.1	Certification of Chief Executive Officer pursuant to Exchange Act Rules 13a-14 and 15d-14, as adopted pursuant to Section 302 of Sarbanes-Oxley Act of 2002.
31.2	Certification of Chief Financial Officer pursuant to Exchange Act Rules 13a-14 and 15d-14, as adopted pursuant to Section 302 of Sarbanes-Oxley Act of 2002.
32.1	Certification of Chief Executive Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
32.2	Certification of 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
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document
101.LAB	XBRL Taxonomy Extension Labels Linkbase Document
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document

EXHIBIT 10.1

INDEMNIFICATION AGREEMENT

This Indemnification Agreement ("Agreement") is made as of _____ __, 20__ by and between Idera Pharmaceuticals, Inc., a Delaware corporation (the "Company"), and _____ ("Indemnitee"). This Agreement supersedes and replaces any and all previous Agreements between the Company and Indemnitee covering the subject matter of this Agreement.

RECITALS

WHEREAS, highly competent persons have become more reluctant to serve publicly-held corporations as [directors] [officers] or in other capacities unless they are provided with adequate protection through insurance or adequate indemnification against inordinate risks of claims and actions against them arising out of their service to and activities on behalf of the corporation;

WHEREAS, the Board of Directors of the Company (the "Board") has determined that, in order to attract and retain qualified individuals, the Company will attempt to maintain on an ongoing basis, at its sole expense, liability insurance to protect persons serving the Company and its subsidiaries from certain liabilities. Although the furnishing of such insurance has been a customary and widespread practice among United States-based corporations and other business enterprises, the Company believes that, given current market conditions and trends, such insurance may be available to it in the future only at higher premiums and with more exclusions. At the same time, directors, officers, and other persons in service to corporations or business enterprises are being increasingly subjected to expensive and time-consuming litigation relating to, among other things, matters that traditionally would have been brought only against the Company or business enterprise itself. The Certificate of Incorporation of the Company (the "Certificate of Incorporation") requires indemnification of the officers and directors of the Company. Indemnitee may also be entitled to indemnification pursuant to the General Corporation Law of the State of Delaware (the "DGCL"). The Certificate of Incorporation and the DGCL expressly provide that the indemnification provisions set forth therein are not exclusive, and thereby contemplate that contracts may be entered into between the Company and members of the board of directors, officers and other persons with respect to indemnification;

WHEREAS, the uncertainties relating to such insurance and to indemnification have increased the difficulty of attracting and retaining such persons;

WHEREAS, the Board has determined that the increased difficulty in attracting and retaining such persons is detrimental to the best interests of the Company and its stockholders and that the Company should act to assure such persons that there will be increased certainty of such protection in the future;

WHEREAS, it is reasonable, prudent and necessary for the Company contractually to obligate itself to indemnify, and to advance expenses on behalf of, such persons to the fullest extent permitted by applicable law so that they will serve or continue to serve the Company free from undue concern that they will not be so indemnified;

WHEREAS, this Agreement is a supplement to and in furtherance of the Certificate of Incorporation and any resolutions adopted pursuant thereto, and shall not be deemed a substitute therefor, nor to diminish or abrogate any rights of Indemnitee thereunder;

WHEREAS, Indemnitee does not regard the protection available under the Certificate of Incorporation and insurance as adequate in the present circumstances, and may not be willing to serve as an officer or director without adequate protection, and the Company desires Indemnitee to serve in such capacity. Indemnitee is willing to serve, continue to serve and to take on additional service for or on behalf of the Company on the condition that he be so indemnified; and

NOW, THEREFORE, in consideration of the premises and the covenants contained herein, the Company and Indemnitee do hereby covenant and agree as follows:

Section 1. Services to the Company. Indemnitee agrees to serve or to continue to serve as a[n] [director] [and] [officer] of the Company. Indemnitee may at any time and for any reason resign from such position (subject to any other contractual obligation or any obligation imposed by operation of law), in which event the Company shall have no obligation under this Agreement to continue Indemnitee in such position. This Agreement shall not be deemed an employment contract between the Company (or any of its subsidiaries or any Enterprise) and Indemnitee. Indemnitee specifically acknowledges that Indemnitee's employment with the Company (or any of its subsidiaries or any Enterprise), if any, is at will, and the Indemnitee may be discharged at any time for any reason, with or without cause, except as may be otherwise provided in any written employment contract between Indemnitee and the Company (or any of its subsidiaries or any Enterprise), other applicable formal severance policies duly adopted by the Board, or, with respect to service as a director or officer of the Company, by the Certificate of Incorporation, the Company's By-laws (the "By-laws"), and the DGCL. The foregoing notwithstanding, this Agreement shall continue in force after Indemnitee has ceased to serve as a[n] [director] [or] [officer] of the Company, as provided in Section 16 hereof.

Section 2. Definitions. As used in this Agreement:

(a) References to "agent" shall mean any person who is or was a director, officer, or employee of the Company or a subsidiary of the Company or other person authorized by the Company to act for the Company, to include such person serving in such capacity as a director, officer, employee, fiduciary or other official of another corporation, partnership, limited liability company, joint venture, trust or other enterprise at the request of, for the convenience of, or to represent the interests of the Company or a subsidiary of the Company.

(b) A "Change in Control" shall be deemed to occur upon the earliest to occur after the date of this Agreement of any of the following events:

i. Acquisition of Stock by Third Party. Any Person (as defined below) is or becomes the Beneficial Owner (as defined below), directly or indirectly, of securities of the Company representing [fifty (50%)] or more of the combined voting power of the Company's then outstanding securities unless the change in relative Beneficial Ownership of the Company's securities by any Person results solely from a reduction in the aggregate number of outstanding shares of securities entitled to vote generally in the election of directors;

ii. Change in Board of Directors. During any period of two (2) consecutive years (not including any period prior to the execution of this Agreement), individuals who at the beginning of such period constitute the Board, and any new director (other than a director designated by a person who has entered into an agreement with the Company to effect a transaction described in Sections 2(b)(i), 2(b)(iii) or 2(b)(iv)) whose election by the Board or nomination for election by the Company's stockholders was approved by a vote of at least two-thirds of the directors then still in office who either were directors at the beginning of the period or whose election or nomination for election was previously so approved, cease for any reason to constitute at least a majority of the members of the Board;

iii. Corporate Transactions. The effective date of a merger or consolidation of the Company with any other entity, other than a merger or consolidation which would result in the voting securities of the Company outstanding immediately prior to such merger or consolidation continuing to represent (either by remaining outstanding or by being converted into voting securities of the surviving entity) more than 51% of the combined voting power of the voting securities of the surviving entity outstanding immediately after such merger or consolidation and with the power to elect at least a majority of the board of directors or other governing body of such surviving entity;

iv. Liquidation. The approval by the stockholders of the Company of a complete liquidation of the Company or an agreement for the sale or disposition by the Company of all or substantially all of the Company's assets; and

v. Other Events. There occurs any other event of a nature that would be required to be reported in response to Item 6(e) of Schedule 14A of Regulation 14A (or a response to any similar item on any similar schedule or form) promulgated under the Exchange Act (as defined below), whether or not the Company is then subject to such reporting requirement.

For purposes of this Section 2(b), the following terms shall have the following meanings:

(A) "Exchange Act" shall mean the Securities Exchange Act of 1934, as amended from time to time.

(B) "Person" shall have the meaning as set forth in Sections 13(d) and 14(d) of the Exchange Act; provided, however, that Person shall exclude (i) the Company, (ii) any trustee or other fiduciary holding securities under an employee benefit plan of the Company, and (iii) any corporation owned, directly or indirectly, by the stockholders of the Company in substantially the same proportions as their ownership of stock of the Company.

(C) "Beneficial Owner" shall have the meaning given to such term in Rule 13d-3 under the Exchange Act; provided, however, that Beneficial Owner shall exclude any Person otherwise becoming a Beneficial Owner by reason of the stockholders of the Company approving a merger of the Company with another entity.

(c) "Corporate Status" describes the status of a person who is or was a director, officer, employee or agent of the Company or of any other corporation, limited liability company, partnership or joint venture, trust or other enterprise which such person is or was serving at the request of the Company.

(d) "Disinterested Director" shall mean a director of the Company who is not and was not a party to the Proceeding in respect of which indemnification is sought by Indemnitee.

(e) "Enterprise" shall mean the Company and any other corporation, limited liability company, partnership, joint venture, trust or other enterprise of which Indemnitee is or was serving at the request of the Company as a director, officer, trustee, partner, managing member, employee, agent or fiduciary.

(f) "Expenses" shall include all reasonable attorneys' fees, retainers, court costs, transcript costs, fees of experts and other professionals, witness fees, travel expenses, duplicating costs, printing and binding costs, telephone charges, postage, delivery service fees, any federal, state, local or foreign taxes imposed on Indemnitee as a result of the actual or deemed receipt of any payments under this Agreement, ERISA excise taxes and penalties, and all other disbursements or expenses of the types customarily incurred in connection with prosecuting, defending, preparing to prosecute or defend, investigating, being or preparing to be a witness in, or otherwise participating in, a Proceeding. Expenses also shall include (i) Expenses incurred in connection with any appeal resulting from any Proceeding, including without limitation the premium, security for, and other costs relating to any cost bond, supersedeas bond, or other appeal bond or its equivalent, and (ii) for purposes of Section 14(d) only, Expenses incurred by Indemnitee in connection with the interpretation, enforcement or defense of Indemnitee's rights under this Agreement, by litigation or otherwise. The parties agree that for the purposes of any advancement of Expenses for which Indemnitee has made written demand to the Company in accordance with this Agreement, all Expenses included in such demand that are certified by affidavit of Indemnitee's counsel as being reasonable shall be presumed

conclusively to be reasonable. Expenses, however, shall not include amounts paid in settlement by Indemnitee or the amount of judgments or fines against Indemnitee.

(g) "Independent Counsel" shall mean a law firm, or a member of a law firm, that is experienced in matters of corporation law and neither presently is, nor in the past five years has been, retained to represent: (i) the Company or Indemnitee in any matter material to either such party (other than with respect to matters concerning the Indemnitee under this Agreement, or of other indemnitees under similar indemnification agreements), or (ii) any other party to the Proceeding giving rise to a claim for indemnification hereunder. Notwithstanding the foregoing, the term "Independent Counsel" shall not include any person who, under the applicable standards of professional conduct then prevailing, would have a conflict of interest in representing either the Company or Indemnitee in an action to determine Indemnitee's rights under this Agreement. The Company agrees to pay the reasonable fees and expenses of the Independent Counsel referred to above and to fully indemnify such counsel against any and all Expenses, claims, liabilities and damages arising out of or relating to this Agreement or its engagement pursuant hereto.

(h) The term "Proceeding" shall include any threatened, pending or completed action, suit, claim, counterclaim, cross claim, arbitration, mediation, alternate dispute resolution mechanism, investigation, inquiry, administrative hearing or any other actual, threatened or completed proceeding, whether brought in the right of the Company or otherwise and whether of a civil, criminal, administrative, legislative, or investigative (formal or informal) nature, including any appeal therefrom, in which Indemnitee was, is or will be involved as a party, potential party, non-party witness or otherwise by reason of the fact that Indemnitee is or was a director or officer of the Company, by reason of any action taken by him (or a failure to take action by him) or of any action (or failure to act) on his part while acting pursuant to his Corporate Status, in each case whether or not serving in such capacity at the time any liability or Expense is incurred for which indemnification, reimbursement, or advancement of Expenses can be provided under this Agreement. If the Indemnitee believes in good faith that a given situation may lead to or culminate in the institution of a Proceeding, this shall be considered a Proceeding under this paragraph.

(i) Reference to "other enterprise" shall include employee benefit plans; references to "fines" shall include any excise tax assessed with respect to any employee benefit plan; references to "serving at the request of the Company" shall include any service as a director, officer, employee or agent of the Company which imposes duties on, or involves services by, such director, officer, employee or agent with respect to an employee benefit plan, its participants or beneficiaries; and a person who acted in good faith and in a manner he reasonably believed to be in the best interests of the participants and beneficiaries of an employee benefit plan shall be deemed to have acted in manner "not opposed to the best interests of the Company" as referred to in this Agreement.

Section 3. Indemnity in Third-Party Proceedings. The Company shall indemnify Indemnitee in accordance with the provisions of this Section 3 if Indemnitee is, or is threatened

to be made, a party to or a participant in any Proceeding, other than a Proceeding by or in the right of the Company to procure a judgment in its favor. Pursuant to this Section 3, Indemnitee shall be indemnified to the fullest extent permitted by applicable law against all Expenses, judgments, fines and amounts paid in settlement (including all interest, assessments and other charges paid or payable in connection with or in respect of such Expenses, judgments, fines and amounts paid in settlement) actually and reasonably incurred by Indemnitee or on his behalf in connection with such Proceeding or any claim, issue or matter therein, if Indemnitee acted in good faith and in a manner he reasonably believed to be in or not opposed to the best interests of the Company and, in the case of a criminal Proceeding had no reasonable cause to believe that his conduct was unlawful. The parties hereto intend that this Agreement shall provide to the fullest extent permitted by law for indemnification in excess of that expressly permitted by statute, including, without limitation, any indemnification provided by the Certificate of Incorporation, the By-laws, vote of its stockholders or disinterested directors or applicable law.

Section 4. Indemnity in Proceedings by or in the Right of the Company. The Company shall indemnify Indemnitee in accordance with the provisions of this Section 4 if Indemnitee is, or is threatened to be made, a party to or a participant in any Proceeding by or in the right of the Company to procure a judgment in its favor. Pursuant to this Section 4, Indemnitee shall be indemnified to the fullest extent permitted by applicable law against all Expenses actually and reasonably incurred by him or on his behalf in connection with such Proceeding or any claim, issue or matter therein, if Indemnitee acted in good faith and in a manner he reasonably believed to be in or not opposed to the best interests of the Company. No indemnification for Expenses shall be made under this Section 4 in respect of any claim, issue or matter as to which Indemnitee shall have been finally adjudged by a court to be liable to the Company, unless and only to the extent that the Delaware Court (as hereinafter defined) or any court in which the Proceeding was brought shall determine upon application that, despite the adjudication of liability but in view of all the circumstances of the case, Indemnitee is fairly and reasonably entitled to indemnification.

Section 5. Indemnification for Expenses of a Party Who is Wholly or Partly Successful. Notwithstanding any other provisions of this Agreement, to the fullest extent permitted by applicable law and to the extent that Indemnitee is a party to (or a participant in) and is successful, on the merits or otherwise, in any Proceeding or in defense of any claim, issue or matter therein, in whole or in part, the Company shall indemnify Indemnitee against all Expenses actually and reasonably incurred by him in connection therewith. If Indemnitee is not wholly successful in such Proceeding but is successful, on the merits or otherwise, as to one or more but less than all claims, issues or matters in such Proceeding, the Company shall indemnify Indemnitee against all Expenses actually and reasonably incurred by him or on his behalf in connection with or related to each successfully resolved claim, issue or matter to the fullest extent permitted by law. For purposes of this Section and without limitation, the termination of any claim, issue or matter in such a Proceeding by dismissal, with or without prejudice, shall be deemed to be a successful result as to such claim, issue or matter.

Section 6. Indemnification For Expenses of a Witness. Notwithstanding any other provision of this Agreement, to the fullest extent permitted by applicable law and to the extent

that Indemnitee is, by reason of his Corporate Status, a witness or otherwise asked to participate in any Proceeding to which Indemnitee is not a party, he shall be indemnified against all Expenses actually and reasonably incurred by him or on his behalf in connection therewith.

Section 7. Partial Indemnification. If Indemnitee is entitled under any provision of this Agreement to indemnification by the Company for some or a portion of Expenses, but not, however, for the total amount thereof, the Company shall nevertheless indemnify Indemnitee for the portion thereof to which Indemnitee is entitled.

Section 8. Additional Indemnification.

(a) Notwithstanding any limitation in Sections 3, 4, or 5, the Company shall indemnify Indemnitee to the fullest extent permitted by applicable law if Indemnitee is a party to or threatened to be made a party to any Proceeding (including a Proceeding by or in the right of the Company to procure a judgment in its favor) against all Expenses, judgments, fines and amounts paid in settlement (including all interest, assessments and other charges paid or payable in connection with or in respect of such Expenses, judgments, fines and amounts paid in settlement) actually and reasonably incurred by Indemnitee in connection with the Proceeding.

(b) For purposes of Section 8(a), the meaning of the phrase "to the fullest extent permitted by applicable law" shall include, but not be limited to:

i. to the fullest extent permitted by the provision of the DGCL that authorizes or contemplates additional indemnification by agreement, or the corresponding provision of any amendment to or replacement of the DGCL, and

ii. to the fullest extent authorized or permitted by any amendments to or replacements of the DGCL adopted after the date of this Agreement that increase the extent to which a corporation may indemnify its officers and directors.

Section 9. Exclusions. Notwithstanding any provision in this Agreement, the Company shall not be obligated under this Agreement to make any indemnification payment in connection with any claim made against Indemnitee:

(a) for which payment has actually been made to or on behalf of Indemnitee under any insurance policy or other indemnity provision, except with respect to any excess beyond the amount paid under any insurance policy or other indemnity provision; or

(b) for (i) an accounting of profits made from the purchase and sale (or sale and purchase) by Indemnitee of securities of the Company within the meaning of Section 16(b) of the Exchange Act (as defined in Section 2(b) hereof) or similar provisions of state statutory law or common law, or (ii) any reimbursement of the Company by the Indemnitee of any bonus or other incentive-based or equity-based compensation or of any profits realized by the Indemnitee from the sale of securities of the Company, as required in each case under the Exchange Act (including any such reimbursements that arise from an accounting restatement of the Company

pursuant to Section 304 of the Sarbanes-Oxley Act of 2002 (the "Sarbanes-Oxley Act"), or the payment to the Company of profits arising from the purchase and sale by Indemnitee of securities in violation of Section 306 of the Sarbanes-Oxley Act); or

(c) except as provided in Section 14(d) of this Agreement, in connection with any Proceeding (or any part of any Proceeding) initiated by Indemnitee, including any Proceeding (or any part of any Proceeding) initiated by Indemnitee against the Company or its directors, officers, employees or other indemnitees, unless (i) the Board authorized the Proceeding (or any part of any Proceeding) prior to its initiation or (ii) the Company provides the indemnification, in its sole discretion, pursuant to the powers vested in the Company under applicable law.

Section 10. Advances of Expenses. Notwithstanding any provision of this Agreement to the contrary (other than Section 14(d)), the Company shall advance, to the extent not prohibited by law, the Expenses incurred by Indemnitee in connection with any Proceeding (or any part of any Proceeding) not initiated by Indemnitee, and such advancement shall be made within thirty (30) days after the receipt by the Company of a statement or statements requesting such advances from time to time, whether prior to or after final disposition of any Proceeding. Advances shall be unsecured and interest free. Advances shall be made without regard to Indemnitee's ability to repay the Expenses and without regard to Indemnitee's ultimate entitlement to indemnification under the other provisions of this Agreement. In accordance with Section 14(d), advances shall include any and all reasonable Expenses incurred pursuing an action to enforce this right of advancement, including Expenses incurred preparing and forwarding statements to the Company to support the advances claimed. The Indemnitee shall qualify for advances upon the execution and delivery to the Company of this Agreement, which shall constitute an undertaking providing that the Indemnitee undertakes to repay the amounts advanced (without interest) to the extent that it is ultimately determined that Indemnitee is not entitled to be indemnified by the Company. No other form of undertaking shall be required other than the execution of this Agreement. This Section 10 shall not apply to any claim made by Indemnitee for which indemnity is excluded pursuant to Section 9.

Section 11. Procedure for Notification and Defense of Claim.

(a) Indemnitee shall notify the Company in writing of any matter with respect to which Indemnitee intends to seek indemnification or advancement of Expenses hereunder as soon as reasonably practicable following the receipt by Indemnitee of written notice thereof. The written notification to the Company shall include a description of the nature of the Proceeding and the facts underlying the Proceeding. To obtain indemnification under this Agreement, Indemnitee shall submit to the Company a written request, including therein or therewith such documentation and information as is reasonably available to Indemnitee and is reasonably necessary to determine whether and to what extent Indemnitee is entitled to indemnification following the final disposition of such Proceeding. The omission by Indemnitee to notify the Company hereunder will not relieve the Company from any liability which it may have to Indemnitee hereunder or otherwise than under this Agreement, and any delay in so notifying the Company shall not constitute a waiver by Indemnitee of any rights under this

Agreement. The Secretary of the Company shall, promptly upon receipt of such a request for indemnification, advise the Board in writing that Indemnitee has requested indemnification.

(b) The Company will be entitled to participate in the Proceeding at its own expense.

Section 12. Procedure Upon Application for Indemnification.

(a) Upon written request by Indemnitee for indemnification pursuant to Section 11(a), a determination, if required by applicable law, with respect to Indemnitee's entitlement thereto shall be made in the specific case: (i) if a Change in Control shall have occurred, by Independent Counsel in a written opinion to the Board, a copy of which shall be delivered to Indemnitee; or (ii) if a Change in Control shall not have occurred, (A) by a majority vote of the Disinterested Directors, even though less than a quorum of the Board, (B) by a committee of Disinterested Directors designated by a majority vote of the Disinterested Directors, even though less than a quorum of the Board, (C) if there are no such Disinterested Directors or, if such Disinterested Directors so direct, by Independent Counsel in a written opinion to the Board, a copy of which shall be delivered to Indemnitee or (D) if so directed by the Board, by the stockholders of the Company; and, if it is so determined that Indemnitee is entitled to indemnification, payment to Indemnitee shall be made within ten (10) days after such determination. Indemnitee shall cooperate with the person, persons or entity making such determination with respect to Indemnitee's entitlement to indemnification, including providing to such person, persons or entity upon reasonable advance request any documentation or information which is not privileged or otherwise protected from disclosure and which is reasonably available to Indemnitee and reasonably necessary to such determination. Any costs or Expenses (including attorneys' fees and disbursements) incurred by Indemnitee in so cooperating with the person, persons or entity making such determination shall be borne by the Company (irrespective of the determination as to Indemnitee's entitlement to indemnification) and the Company hereby indemnifies and agrees to hold Indemnitee harmless therefrom. The Company promptly will advise Indemnitee in writing with respect to any determination that Indemnitee is or is not entitled to indemnification, including a description of any reason or basis for which indemnification has been denied.

(b) In the event the determination of entitlement to indemnification is to be made by Independent Counsel pursuant to Section 12(a) hereof, the Independent Counsel shall be selected as provided in this Section 12(b). If a Change in Control shall not have occurred, the Independent Counsel shall be selected by the Board, and the Company shall give written notice to Indemnitee advising him of the identity of the Independent Counsel so selected. If a Change in Control shall have occurred, the Independent Counsel shall be selected by Indemnitee (unless Indemnitee shall request that such selection be made by the Board, in which event the preceding sentence shall apply), and Indemnitee shall give written notice to the Company advising it of the identity of the Independent Counsel so selected. In either event, Indemnitee or the Company, as the case may be, may, within ten (10) days after such written notice of selection shall have been given, deliver to the Company or to Indemnitee, as the case may be, a written objection to

such selection; provided, however, that such objection may be asserted only on the ground that the Independent Counsel so selected does not meet the requirements of "Independent Counsel" as defined in Section 2 of this Agreement, and the objection shall set forth with particularity the factual basis of such assertion. Absent a proper and timely objection, the person so selected shall act as Independent Counsel. If such written objection is so made and substantiated, the Independent Counsel so selected may not serve as Independent Counsel unless and until such objection is withdrawn or the Delaware Court has determined that such objection is without merit. If, within twenty (20) days after the later of submission by Indemnitee of a written request for indemnification pursuant to Section 11(a) hereof and the final disposition of the Proceeding, no Independent Counsel shall have been selected and not objected to, either the Company or Indemnitee may petition the Delaware Court for resolution of any objection which shall have been made by the Company or Indemnitee to the other's selection of Independent Counsel and/or for the appointment as Independent Counsel of a person selected by such court or by such other person as such court shall designate, and the person with respect to whom all objections are so resolved or the person so appointed shall act as Independent Counsel under Section 12(a) hereof. Upon the due commencement of any judicial proceeding or arbitration pursuant to Section 14(a) of this Agreement, Independent Counsel shall be discharged and relieved of any further responsibility in such capacity (subject to the applicable standards of professional conduct then prevailing).

Section 13. Presumptions and Effect of Certain Proceedings.

(a) In making a determination with respect to entitlement to indemnification hereunder, the person or persons or entity making such determination shall, to the fullest extent not prohibited by law, presume that Indemnitee is entitled to indemnification under this Agreement if Indemnitee has submitted a request for indemnification in accordance with Section 11(a) of this Agreement, and the Company shall, to the fullest extent not prohibited by law, have the burden of proof to overcome that presumption in connection with the making by any person, persons or entity of any determination contrary to that presumption. Neither the failure of the Company (including by its directors or Independent Counsel) to have made a determination prior to the commencement of any action pursuant to this Agreement that indemnification is proper in the circumstances because Indemnitee has met the applicable standard of conduct, nor an actual determination by the Company (including by its directors or Independent Counsel) that Indemnitee has not met such applicable standard of conduct, shall be a defense to the action or create a presumption that Indemnitee has not met the applicable standard of conduct.

(b) Subject to Section 14(e), if the person, persons or entity empowered or selected under Section 12 of this Agreement to determine whether Indemnitee is entitled to indemnification shall not have made a determination within sixty (60) days after receipt by the Company of the request therefor, the requisite determination of entitlement to indemnification shall, to the fullest extent not prohibited by law, be deemed to have been made and Indemnitee shall be entitled to such indemnification, absent (i) a misstatement by Indemnitee of a material fact, or an omission of a material fact necessary to make Indemnitee's statement not materially misleading, in connection with the request for indemnification, or (ii) a prohibition of such

indemnification under applicable law; provided, however, that such 60-day period may be extended for a reasonable time, not to exceed an additional thirty (30) days, if the person, persons or entity making the determination with respect to entitlement to indemnification in good faith requires such additional time for the obtaining or evaluating of documentation and/or information relating thereto; and provided, further, that the foregoing provisions of this Section 13(b) shall not apply (i) if the determination of entitlement to indemnification is to be made by the stockholders pursuant to Section 12(a) of this Agreement and if (A) within fifteen (15) days after receipt by the Company of the request for such determination the Board has resolved to submit such determination to the stockholders for their consideration at an annual meeting thereof to be held within seventy-five (75) days after such receipt and such determination is made thereat, or (B) a special meeting of stockholders is called within fifteen (15) days after such receipt for the purpose of making such determination, such meeting is held for such purpose within sixty (60) days after having been so called and such determination is made thereat, or (ii) if the determination of entitlement to indemnification is to be made by Independent Counsel pursuant to Section 12(a) of this Agreement.

(c) The termination of any Proceeding or of any claim, issue or matter therein, by judgment, order, settlement or conviction, or upon a plea of nolo contendere or its equivalent, shall not (except as otherwise expressly provided in this Agreement) of itself adversely affect the right of Indemnitee to indemnification or create a presumption that Indemnitee did not act in good faith and in a manner which he reasonably believed to be in or not opposed to the best interests of the Company or, with respect to any criminal Proceeding, that Indemnitee had reasonable cause to believe that his conduct was unlawful.

(d) For purposes of any determination of good faith, Indemnitee shall be deemed to have acted in good faith if Indemnitee's action is based on the records or books of account of the Enterprise, including financial statements, or on information supplied to Indemnitee by the directors or officers of the Enterprise in the course of their duties, or on the advice of legal counsel for the Enterprise or on information or records given or reports made to the Enterprise by an independent certified public accountant or by an appraiser or other expert selected with the reasonable care by the Enterprise. The provisions of this Section 13(d) shall not be deemed to be exclusive or to limit in any way the other circumstances in which the Indemnitee may be deemed to have met the applicable standard of conduct set forth in this Agreement.

(e) The knowledge and/or actions, or failure to act, of any director, officer, trustee, partner, managing member, fiduciary, agent or employee of the Enterprise shall not be imputed to Indemnitee for purposes of determining the right to indemnification under this Agreement.

Section 14. Remedies of Indemnitee.

(a) Subject to Section 14(e), in the event that (i) a determination is made pursuant to Section 12 of this Agreement that Indemnitee is not entitled to indemnification under this Agreement, (ii) advancement of Expenses is not timely made pursuant to Section 10 of this Agreement, (iii) no determination of entitlement to indemnification shall have been made

pursuant to Section 12(a) of this Agreement within ninety (90) days after receipt by the Company of the request for indemnification, (iv) payment of indemnification is not made pursuant to Section 5, 6 or 7 or the last sentence of Section 12(a) of this Agreement within ten (10) days after receipt by the Company of a written request therefor, (v) payment of indemnification pursuant to Section 3, 4 or 8 of this Agreement is not made within ten (10) days after a determination has been made that Indemnitee is entitled to indemnification, or (vi) in the event that the Company or any other person takes or threatens to take any action to declare this Agreement void or unenforceable, or institutes any litigation or other action or Proceeding designed to deny, or to recover from, the Indemnitee the benefits provided or intended to be provided to the Indemnitee hereunder, Indemnitee shall be entitled to an adjudication by a court of his entitlement to such indemnification or advancement of Expenses. Alternatively, Indemnitee, at his option, may seek an award in arbitration to be conducted by a single arbitrator pursuant to the Commercial Arbitration Rules of the American Arbitration Association. Indemnitee shall commence such proceeding seeking an adjudication or an award in arbitration within 180 days following the date on which Indemnitee first has the right to commence such proceeding pursuant to this Section 14(a); provided, however, that the foregoing clause shall not apply in respect of a proceeding brought by Indemnitee to enforce his rights under Section 5 of this Agreement. The Company shall not oppose Indemnitee's right to seek any such adjudication or award in arbitration.

(b) In the event that a determination shall have been made pursuant to Section 12(a) of this Agreement that Indemnitee is not entitled to indemnification, any judicial proceeding or arbitration commenced pursuant to this Section 14 shall be conducted in all respects as a de novo trial, or arbitration, on the merits and Indemnitee shall not be prejudiced by reason of that adverse determination. In any judicial proceeding or arbitration commenced pursuant to this Section 14 the Company shall have the burden of proving Indemnitee is not entitled to indemnification or advancement of Expenses, as the case may be.

(c) If a determination shall have been made pursuant to Section 12(a) of this Agreement that Indemnitee is entitled to indemnification, the Company shall be bound by such determination in any judicial proceeding or arbitration commenced pursuant to this Section 14, absent (i) a misstatement by Indemnitee of a material fact, or an omission of a material fact necessary to make Indemnitee's statement not materially misleading, in connection with the request for indemnification, or (ii) a prohibition of such indemnification under applicable law.

(d) The Company shall, to the fullest extent not prohibited by law, be precluded from asserting in any judicial proceeding or arbitration commenced pursuant to this Section 14 that the procedures and presumptions of this Agreement are not valid, binding and enforceable and shall stipulate in any such court or before any such arbitrator that the Company is bound by all the provisions of this Agreement. It is the intent of the Company that, to the fullest extent permitted by law, the Indemnitee not be required to incur legal fees or other Expenses associated with the interpretation, enforcement or defense of Indemnitee's rights under this Agreement by litigation or otherwise because the cost and expense thereof would substantially detract from the benefits intended to be extended to the Indemnitee hereunder. The Company shall, to the fullest extent permitted by law, indemnify Indemnitee against any and

all Expenses and, if requested by Indemnitee, shall (within ten (10) days after receipt by the Company of a written request therefor) advance, to the extent not prohibited by law, such Expenses to Indemnitee, which are incurred by Indemnitee in connection with any action brought by Indemnitee for indemnification or advance of Expenses from the Company under this Agreement or under any directors' and officers' liability insurance policies maintained by the Company if, in the case of indemnification, Indemnitee is wholly successful on the underlying claims; if Indemnitee is not wholly successful on the underlying claims, then such indemnification shall be only to the extent Indemnitee is successful on such underlying claims or otherwise as permitted by law, whichever is greater.

(e) Notwithstanding anything in this Agreement to the contrary, no determination as to entitlement of Indemnitee to indemnification under this Agreement shall be required to be made prior to the final disposition of the Proceeding.

Section 15. Non-exclusivity; Survival of Rights; Insurance; Subrogation.

(a) The rights of indemnification and to receive advancement of Expenses as provided by this Agreement shall not be deemed exclusive of any other rights to which Indemnitee may at any time be entitled under applicable law, the Certificate of Incorporation, the By-laws, any agreement, a vote of stockholders or a resolution of directors, or otherwise. No amendment, alteration or repeal of this Agreement or of any provision hereof shall limit or restrict any right of Indemnitee under this Agreement in respect of any action taken or omitted by such Indemnitee in his Corporate Status prior to such amendment, alteration or repeal. To the extent that a change in Delaware law, whether by statute or judicial decision, permits greater indemnification or advancement of Expenses than would be afforded currently under the Certificate of Incorporation and this Agreement, it is the intent of the parties hereto that Indemnitee shall enjoy by this Agreement the greater benefits so afforded by such change. No right or remedy herein conferred is intended to be exclusive of any other right or remedy, and every other right and remedy shall be cumulative and in addition to every other right and remedy given hereunder or now or hereafter existing at law or in equity or otherwise. The assertion or employment of any right or remedy hereunder, or otherwise, shall not prevent the concurrent assertion or employment of any other right or remedy.

(b) To the extent that the Company maintains an insurance policy or policies providing liability insurance for directors, officers, employees, or agents of the Enterprise, Indemnitee shall be covered by such policy or policies in accordance with its or their terms to the maximum extent of the coverage available for any such director, officer, employee or agent under such policy or policies. If, at the time of the receipt of a notice of a claim pursuant to the terms hereof, the Company has director and officer liability insurance in effect, the Company shall give prompt notice of such claim or of the commencement of a Proceeding, as the case may be, to the insurers in accordance with the procedures set forth in the respective policies. The Company shall thereafter take all necessary or desirable action to cause such insurers to pay, on behalf of the Indemnitee, all amounts payable as a result of such Proceeding in accordance with the terms of such policies.

(c) In the event of any payment under this Agreement, the Company shall be subrogated to the extent of such payment to all of the rights of recovery of Indemnitee, who shall execute all papers required and take all action necessary to secure such rights, including execution of such documents as are necessary to enable the Company to bring suit to enforce such rights.

(d) The Company shall not be liable under this Agreement to make any payment of amounts otherwise indemnifiable (or for which advancement is provided hereunder) hereunder if and to the extent that Indemnitee has otherwise actually received such payment under any insurance policy, contract, agreement or otherwise.

(e) The Company's obligation to indemnify or advance Expenses hereunder to Indemnitee who is or was serving at the request of the Company as a director, officer, trustee, partner, managing member, fiduciary, employee or agent of any other corporation, limited liability company, partnership, joint venture, trust, employee benefit plan or other enterprise shall be reduced by any amount Indemnitee has actually received as indemnification or advancement of Expenses from such other corporation, limited liability company, partnership, joint venture, trust or other enterprise.

Section 16. Duration of Agreement. This Agreement shall continue until and terminate upon the later of: (a) ten (10) years after the date that Indemnitee shall have ceased to serve as a[n] [director] [or] [officer] of the Company or (b) one (1) year after the final termination of any Proceeding then pending in respect of which Indemnitee is granted rights of indemnification or advancement of Expenses hereunder and of any proceeding commenced by Indemnitee pursuant to Section 14 of this Agreement relating thereto. The indemnification and advancement of expenses rights provided by or granted pursuant to this Agreement shall be binding upon and be enforceable by the parties hereto and their respective successors and assigns (including any direct or indirect successor by purchase, merger, consolidation or otherwise to all or substantially all of the business or assets of the Company), shall continue as to an Indemnitee who has ceased to be a director, officer, employee or agent of the Company or of any other Enterprise, and shall inure to the benefit of Indemnitee and his or her spouse, assigns, heirs, devisees, executors and administrators and other legal representatives.

Section 17. Severability. If any provision or provisions of this Agreement shall be held to be invalid, illegal or unenforceable for any reason whatsoever: (a) the validity, legality and enforceability of the remaining provisions of this Agreement (including without limitation, each portion of any Section of this Agreement containing any such provision held to be invalid, illegal or unenforceable, that is not itself invalid, illegal or unenforceable) shall not in any way be affected or impaired thereby and shall remain enforceable to the fullest extent permitted by law; (b) such provision or provisions shall be deemed reformed to the extent necessary to conform to applicable law and to give the maximum effect to the intent of the parties hereto; and (c) to the fullest extent possible, the provisions of this Agreement (including, without limitation, each portion of any Section of this Agreement containing any such provision held to be invalid, illegal

or unenforceable, that is not itself invalid, illegal or unenforceable) shall be construed so as to give effect to the intent manifested thereby.

Section 18. Enforcement.

(a) The Company expressly confirms and agrees that it has entered into this Agreement and assumed the obligations imposed on it hereby in order to induce Indemnitee to serve or to continue to serve as a director or officer of the Company, and the Company acknowledges that Indemnitee is relying upon this Agreement in serving as a director or officer of the Company.

(b) This Agreement constitutes the entire agreement between the parties hereto with respect to the subject matter hereof and supersedes all prior agreements and understandings, oral, written and implied, between the parties hereto with respect to the subject matter hereof; provided, however, that this Agreement is a supplement to and in furtherance of the Certificate of Incorporation, the By-laws and applicable law, and shall not be deemed a substitute therefor, nor to diminish or abrogate any rights of Indemnitee thereunder.

Section 19. Modification and Waiver. No supplement, modification or amendment of this Agreement shall be binding unless executed in writing by the parties hereto. No waiver of any of the provisions of this Agreement shall be deemed or shall constitute a waiver of any other provisions of this Agreement nor shall any waiver constitute a continuing waiver.

Section 20. Notice by Indemnitee. Indemnitee agrees promptly to notify the Company in writing upon being served with any summons, citation, subpoena, complaint, indictment, information or other document relating to any Proceeding or matter which may be subject to indemnification or advancement of Expenses covered hereunder. The failure of Indemnitee to so notify the Company shall not relieve the Company of any obligation which it may have to the Indemnitee under this Agreement or otherwise.

Section 21. Notices. All notices, requests, demands and other communications under this Agreement shall be in writing and shall be deemed to have been duly given if (a) delivered by hand and receipted for by the party to whom said notice or other communication shall have been directed, (b) mailed by certified or registered mail with postage prepaid, on the third business day after the date on which it is so mailed, (c) mailed by reputable overnight courier and receipted for by the party to whom said notice or other communication shall have been directed or (d) sent by facsimile transmission, with receipt of oral confirmation that such transmission has been received:

(a) If to Indemnitee, at the address indicated on the signature page of this Agreement, or such other address as Indemnitee shall provide to the Company.

(b) If to the Company to:

Idera Pharmaceuticals, Inc.

167 Sidney Street
Cambridge, Massachusetts 02139

or to any other address as may have been furnished to Indemnitee by the Company.

Section 22. Contribution. To the fullest extent permissible under applicable law, if the indemnification provided for in this Agreement is unavailable to Indemnitee for any reason whatsoever, the Company, in lieu of indemnifying Indemnitee, shall contribute to the amount incurred by Indemnitee, whether for judgments, fines, penalties, excise taxes, amounts paid or to be paid in settlement and/or for Expenses, in connection with any claim relating to an indemnifiable event under this Agreement, in such proportion as is deemed fair and reasonable in light of all of the circumstances of such Proceeding in order to reflect (i) the relative benefits received by the Company and Indemnitee as a result of the event(s) and/or transaction(s) giving cause to such Proceeding; and/or (ii) the relative fault of the Company (and its directors, officers, employees and agents) and Indemnitee in connection with such event(s) and/or transaction(s).

Section 23. Applicable Law and Consent to Jurisdiction. This Agreement and the legal relations among the parties shall be governed by, and construed and enforced in accordance with, the laws of the State of Delaware, without regard to its conflict of laws rules. Except with respect to any arbitration commenced by Indemnitee pursuant to Section 14(a) of this Agreement, the Company and Indemnitee hereby irrevocably and unconditionally (i) agree that any action or proceeding arising out of or in connection with this Agreement shall be brought only in the Chancery Court of the State of Delaware (the "Delaware Court"), and not in any other state or federal court in the United States of America or any court in any other country, (ii) consent to submit to the exclusive jurisdiction of the Delaware Court for purposes of any action or proceeding arising out of or in connection with this Agreement, (iii) appoint, to the extent such party is not otherwise subject to service of process in the State of Delaware, irrevocably The Corporation Trust Company, 1209 Orange Street – Corporation Trust Center, Wilmington, New Castle County, Delaware 19801 as its agent in the State of Delaware as such party's agent for acceptance of legal process in connection with any such action or proceeding against such party with the same legal force and validity as if served upon such party personally within the State of Delaware, (iv) waive any objection to the laying of venue of any such action or proceeding in the Delaware Court, and (v) waive, and agree not to plead or to make, any claim that any such action or proceeding brought in the Delaware Court has been brought in an improper or inconvenient forum.

Section 24. Identical Counterparts. This Agreement may be executed in one or more counterparts, each of which shall for all purposes be deemed to be an original but all of which together shall constitute one and the same Agreement. Only one such counterpart signed by the party against whom enforceability is sought needs to be produced to evidence the existence of this Agreement.

Section 25. Miscellaneous. Use of the masculine pronoun shall be deemed to include usage of the feminine pronoun where appropriate. The headings of this Agreement are inserted

for convenience only and shall not be deemed to constitute part of this Agreement or to affect the construction thereof.

IN WITNESS WHEREOF, the parties have caused this Agreement to be signed as of the day and year first above written.

IDERA PHARMACEUTICALS, INC. INDEMNITEE

By:

Vincent J. Milano
Chief Executive Officer Address:

Exhibit 10.2

SEVERANCE AND CHANGE OF CONTROL AGREEMENT

CHANGE OF CONTROL AGREEMENT by and between Idera Pharmaceuticals, Inc., a Delaware corporation (the "Company"), and < Name> (the "Executive"), dated as of <Date>.

WHEREAS, the Board of Directors of the Company (the "Board"), has determined that it is in the best interests of the Company and its shareholders to assure that the Company will have the continued dedication of the Executive, notwithstanding the possibility, threat, or occurrence of a Change of Control (as defined below) of the Company. The Board believes it is imperative to diminish the inevitable distraction of the Executive by virtue of the personal uncertainties and risks created by a pending or threatened Change of Control and to encourage the Executive's full attention and dedication to the Company currently and in the event of any threatened or pending Change of Control, and to provide the Executive with compensation and benefits arrangements upon a Change of Control which ensure that the compensation and benefits expectations of the Executive will be satisfied and which are competitive with those of other corporations;

WHEREAS, the Executive was [hired/has served] as <> of the Company with a start date of <>;

WHEREAS, in recognition of the Executive's [hiring/serving] as <>, the Company and Executive now desire to enter into this Severance and Change of Control Agreement, which is consistent with the change of control and severance protection provided to the Company's most senior officers (the "Agreement").

NOW, THEREFORE, in consideration of the mutual covenants and agreements hereinafter set forth, the parties hereto, each intending to be legally bound, do hereby agree as follows:

1. **Certain Definitions**.
   a) The "Effective Date" shall be the first date during the "Change of Control Period" (as defined in Section 1(b)) on which a Change of Control occurs. Anything in this Agreement to the contrary notwithstanding, if the Executive's employment with the Company is terminated or the Executive ceases to be an officer of the Company prior to the date on which a Change of Control occurs, and it is reasonably demonstrated that such termination of employment (1) was at the request of a third party who has taken steps reasonably calculated to effect the Change of Control or (2) otherwise arose in connection with or in anticipation of the Change of Control, then for all purposes of this Agreement the "Effective Date" shall mean the date immediately prior to the date of such termination of employment. If prior to the Effective Date, the Executive's employment with the Company terminates, then the Executive shall have no further rights under this Agreement, except with respect to benefits under Section 6(e), if applicable, or unless such termination of Employment was in anticipation of the Change of Control in which case the termination shall be deemed to have occurred after the consummation of the Change of Control.

   b) The "Change of Control Period" is the period commencing on the date hereof and ending on December 31, 2018 provided, that commencing on December 31, 2017 and each December 31 thereafter (each such date to be referred to as the "Renewal Date"), the term of this Agreement shall automatically be extended, without any further action by the Company or

the Executive, so as to terminate two years from such Renewal Date; provided, however that if the Company shall give notice in writing to the Executive at least thirty (30) days prior to a Renewal Date (the "Pending Renewal Date"), stating that the Change of Control Period shall not be extended, then the Change of Control Period shall expire two years from the Pending Renewal Date.

2. **Change of Control**. For the purpose of this Agreement, a "Change of Control" shall mean the occurrence of any of the following events:
   a) Change in the composition of the Board over a period of thirty-six consecutive months or less such that a majority of the members of the Board ceases to be comprised of individuals who are Continuing Members; for such purpose, a "Continuing Member" shall mean an individual who is a member of the Board on the date of this Agreement and any successor of a Continuing Member who is elected to the Board or nominated for election by action of a majority of Continuing Members then serving on the Board;
   b) any merger or consolidation that results in the voting securities of the Company outstanding immediately prior thereto representing (either by remaining outstanding or by being converted into voting securities of the surviving or acquiring entity) less than 60% of the combined voting power of the voting securities of the Company or such surviving or acquiring entity outstanding immediately after such merger or consolidation;
   c) any sale of all or substantially all of the assets of the Company;
   d) the complete liquidation or dissolution of the Company; or
   e) the acquisition of "beneficial ownership" (as defined in Rule 13d-3 under the Exchange Act) of securities of the Company representing 50% or more of the combined voting power of the Company's then outstanding securities (other than through a merger or consolidation or an acquisition of securities directly from the Company) by any "person," as such term is used in Sections 13(d) and 14(d) of the Exchange Act, other than the Company, any trustee or other fiduciary holding securities under an employee benefit plan of the Company or any corporation owned directly or indirectly by the stockholders of the Company in substantially the same proportion as their ownership of stock of the Company; provided however that, where applied to compensation subject to Section 409A of the Internal Revenue Code and the guidance issued thereunder ("Section 409A"), any acceleration of or change in payment shall only apply (if required by Section 409A) if the Change in Control is also a change in control event described in Treasury Regulation 1.409A-3(i)(5).

3. **Employment Period**. Subject to the terms and conditions hereof, the Company hereby agrees to continue the Executive in its employ, and the Executive hereby agrees to remain in the employ of the Company, for the period commencing on the Effective Date and ending on the last day of the twenty-fourth month following the month in which the Effective Date occurs (the "Employment Period").

4. **Terms of Employment**.
   a) Position and Duties.
      i. During the Employment Period, (A) the Executive's position (including status, offices, titles and reporting requirements), authority, duties and responsibilities shall be at least commensurate in all material respects with the most significant of those held, exercised and assigned at any time during the 90-day period immediately preceding the Effective Date and (B) the Executive's services shall be

performed at the location where the Executive was employed immediately preceding the Effective Date or any office or location less than 35 miles from such location.

ii. During the Employment Period, and excluding any periods of vacation and sick leave to which the Executive is entitled, the Executive agrees to devote his full business time to the business and affairs of the Company and, to the extent necessary to discharge the responsibilities assigned to the Executive hereunder, to use the Executive's reasonable best efforts to perform faithfully and efficiently such responsibilities. During the Employment Period it shall not be a violation of this Agreement for the Executive to (A) serve on corporate, civic or charitable boards or committees, (B) deliver lectures, fulfill speaking engagements or teach at educational institutions and (C) manage personal investments, so long as such activities do not significantly interfere with the performance of the Executive's responsibilities as an employee of the Company in accordance with this Agreement. It is expressly understood and agreed that to the extent that any such activities have been conducted by the Executive prior to the Effective Date, the continued conduct of such activities (or the conduct of activities similar in nature and scope thereto) subsequent to the Effective Date.

b) Compensation.

i. Base Salary. During the Employment Period, the Executive shall receive an annual base salary ("Annual Base Salary"), which shall be paid at no less than a monthly rate, at least equal to twelve times the highest monthly base salary paid or payable to the Executive by the Company and its affiliated companies in respect of the twelve-month period immediately preceding the month in which the Effective Date occurs. During the Employment Period, the Annual Base Salary shall be reviewed at least annually and shall be increased at any time and from time to time as shall be substantially consistent with increases in base salary awarded in the ordinary course of business to other peer executives of the Company and its affiliated companies. Any increase in Annual Base Salary shall not serve to limit or reduce any other obligation to the Executive under this Agreement. Annual Base Salary shall not be reduced after any such increase and the term Annual Base Salary as utilized in this Agreement shall refer to Annual Base Salary as so increased. As used in this Agreement, the term "affiliated companies" includes any company controlled by, controlling or under common control with the Company.

ii. Annual Bonus. In addition to Annual Base Salary, the Executive shall be awarded, for each fiscal year during the Employment Period, an annual cash bonus (the "Annual Bonus"; which shall include, without limitation, any annual cash bonus plan or program provided to Executive or any other similar plan) in cash at least equal to the greatest of (a) the average (annualized for any fiscal year consisting of less than twelve full months or with respect to which the Executive has been employed by the Company for less than twelve full months) bonus paid or that has been earned and accrued, but unpaid to the Executive by the Company and its affiliated companies in respect of the three fiscal years immediately preceding the fiscal year in which the Effective Date occurs, (b) the Annual Bonus paid for the fiscal year

immediately preceding the fiscal year in which the Effective Date occurs, or (c) the 100 percent target bonus payout amount determined in accordance with the terms of the Company's bonus plans for senior executives for the fiscal year immediately preceding the Effective Date, the fiscal year in which the Effective Date occurs or any fiscal year following the Effective Date and prior to the then current fiscal year, whichever is highest (the "Target Bonus"). Each such Annual Bonus shall be paid no later than the 15th day of the third month of the fiscal year next following the fiscal year for which the Annual Bonus is awarded, unless the Executive shall elect to defer the receipt of such Annual Bonus pursuant to any nonqualified plan of the Company. Notwithstanding anything herein to the contrary, any portion of Annual Base Salary or Annual Bonus electively deferred by the Executive pursuant to a qualified or a non-qualified plan shall be included in determining the Annual Base Salary and Annual Bonus. If the fiscal year of any successor to this Agreement, as described by Section 11(c) herein, is different than the Company's fiscal year at the time of the Effective Date, then the Executive shall be paid (i) the Annual Bonus that would have been paid upon the end of Company's fiscal year in which the Effective Date Occurs, and (ii) a pro-rata Annual Bonus for any months of service performed following the end of the Company's fiscal year, but prior to the first day of the successor's fiscal year immediately following the Change of Control. The Annual Bonuses thereafter shall be based on the successor's first full fiscal year beginning after the Change of Control and successive fiscal years thereafter. Any partial months shall be rounded to the nearest whole number using normal mathematical convention.

iii. Incentive, Savings and Retirement Plans. In addition to Annual Base Salary and Annual Bonus payable as hereinabove provided, the Executive shall be entitled to participate during the Employment Period in all incentive, savings and retirement plans, practices, policies and programs applicable to other peer executives of the Company and its affiliated companies, but in no event shall such plans practices, policies and programs provide the Executive with incentive, savings and retirement benefits opportunities, in each case, less favorable, in the aggregate, than the most favorable of those provided by the Company and its affiliated companies for the Executive under such plans, practices, policies and programs as in effect at any time during the one-year immediately preceding the Effective Date, or, if more favorable to the Executive, those provided generally at any time after the Effective Date to other peer executives of the Company and its affiliated companies.

iv. Welfare Benefit Plans. During the Employment Period, the Executive and/or the Executive's family, as the case may be, shall be eligible for participation in and shall receive all benefits under welfare benefit plans, practices, policies and programs provided by the Company and its affiliated companies (including, without limitation, medical, prescription, dental, disability, salary continuance, employee life, group life, accidental death and travel accident insurance plans and programs) and applicable to other peer executives of the Company and its affiliated companies, but in no event shall such plans, practices, policies and programs provide benefits which are less favorable, in the aggregate, than the most favorable of such plans, practices, policies and programs in effect at any time during the one-year period

immediately preceding the Effective Date, or, if more favorable to the Executive, those provided generally at any time after the Effective Date to other peer executives of the Company and its affiliated companies.

v. Expenses. During the Employment Period, the Executive shall be entitled to receive prompt reimbursement for all reasonable expenses incurred by the Executive upon submission of appropriate accountings in accordance with the most favorable policies, practices and procedures of the Company and its affiliated companies in effect at any time during the one-year period immediately preceding the Effective Date or, if more favorable to the Executive, as in effect at any time thereafter with respect to other peer executives of the Company and its affiliated companies.

vi. Fringe Benefits. During the Employment Period, the Executive shall be entitled to fringe benefits in accordance with the most favorable plans, practices, programs and policies of the Company and its affiliated companies in effect at any time during the one-year period immediately preceding the Effective Date or, if more favorable to the Executive, as in effect at any time thereafter with respect to other peer executives of the Company and its affiliated companies.

vii. Office and Support Staff. During the Employment Period, the Executive shall be entitled to an office or offices of a size and with furnishings and other appointments, and to exclusive personal secretarial and other assistance, at least equal to the most favorable of the foregoing provided to the Executive by the Company and its affiliated companies at any time during the one-year period immediately preceding the Effective Date or, if more favorable to the Executive, as provided at any time thereafter with respect to other peer executives of the Company and its affiliated companies.

viii. Vacation. During the Employment Period, the Executive shall be entitled to paid vacation in accordance with the most favorable plans, policies, programs and practices of the Company and its affiliated companies as in effect at any time during the one-year period immediately preceding the Effective Date or, if more favorable to the Executive, as in effect at any time thereafter with respect to other peer incentives of the Company and its affiliated companies.

5. **Termination of Employment**.

a) Death or Disability. The Executive's employment shall terminate automatically upon the Executive's death during the Employment Period. If the Company determines in good faith that the Disability of the Executive has occurred during the Employment Period (pursuant to the definition of "Disability" set forth below), it may give to the Executive written notice in accordance with Section 13(b) of this Agreement of its intention to terminate the Executive's employment. In such event, the Executive's employment with the Company shall terminate effective on the 30th day after receipt of such notice by the Executive (the "Disability Effective Date"), provided that, within the 30 days after such receipt, the Executive shall not have returned to full-time performance of the Executive's duties. For purposes of this Agreement, "Disability" means the absence of the Executive from the

Executive's duties with the Company on a full-time basis for 180 consecutive business days as a result of incapacity due to mental or physical illness which is determined to be total and permanent by a physician selected by the Company or its insurers and acceptable to the Executive or the Executive's legal representative (such agreement as to acceptability not to be withheld unreasonably).

b) Cause. The Company may terminate the Executive's employment during the Employment Period for "Cause". For purposes of this Agreement, "Cause" means (i) an act or acts of personal dishonesty taken by the Executive and intended to result in substantial personal enrichment of the Executive at the expense of the Company, (ii) repeated violations by the Executive of the Executive's obligations under Section 4(a) of this Agreement (other than as a result of incapacity due to physical or mental illness) which are demonstrably willful and deliberate on the Executive's part, which are committed in bad faith or without reasonable belief that such violations are in the best interests of the Company and which are not remedied in a reasonable period of time after receipt of written notice from the Company or (iii) the conviction of the Executive of a felony involving moral turpitude. The Company shall provide the Executive with 30 days written notice of any determination of Cause and provide the Executive, for a period of 30 days following such notice, with the opportunity to appear before the Board, with or without legal representation, to present arguments and evidence on his behalf and following such presentation to the Board, the Executive may only be terminated for Cause if the Board (excluding the Executive if he is a member of the Board), by unanimous consent reasonably determines in good faith that his actions did, in fact, constitute for Cause.

c) Good Reason. The Executive's employment may be terminated during the Employment Period by the Executive for Good Reason. For purposes of this Agreement, "Good Reason" means:

i. A material diminution in the Executive's base compensation;
ii. A material diminution in the Executive's authority, duties and responsibilities as in effect immediately prior to the Change of Control or, if applicable, the Date of Termination;
iii. A material change in the geographic location in which Executive's principal office was located immediately prior to the Change of Control or, if applicable, the Date of Termination, such that it makes it unreasonable for the Executive to commute to the Company's offices four or more business days per week;
iv. Any other action or inaction that constitutes a material breach by the Company of this Agreement or any other agreement under which the Executive provides services;

provided, however, that Good Reason shall not exist unless the Executive has given written notice to the Company within ninety (90) days of the initial existence of the Good Reason event or condition(s) giving specific details regarding the event or condition; and unless the Company has had at least thirty (30) days to cure such Good Reason event or condition after the delivery of such written notice and has failed to cure such event or condition to the reasonable satisfaction of the Executive within such thirty (30) day cure period.

d) Notice of Termination. Any termination by the Company for Cause or by the Executive for Good Reason shall be communicated by Notice of Termination to the other party hereto given in accordance with Section 13(b) of this Agreement. For purposes of this Agreement, a "Notice of Termination" means a written notice which (i) indicates the specific termination provision in this Agreement relied upon, (ii) to the extent applicable, sets forth in reasonable detail the facts and circumstances claimed to provide a basis for termination of the Executive's employment under the provision so indicated and (iii) if the Date of Termination (as defined below) is other than the date of receipt of such notice, specifies the termination date (which date shall be not more than fifteen days after the giving of such notice). The failure by the Executive or the Company to set forth in the Notice of Termination any fact or circumstance which contributes to a showing of Good Reason or Cause shall not waive any right of the Executive or the Company hereunder or preclude the Executive or the Company from asserting such fact or circumstance in enforcing the Executive's or the Company's rights hereunder.

e) Date of Termination. "Date of Termination" means the date of receipt of the Notice of Termination or any later date (taking into account any applicable notice and cure period) specified therein, as the case may be; provided however, that (i) if the Executive's employment is terminated by the Company other than for Cause, death or Disability, the Date of Termination shall be the date on which the Company notifies the Executive of such termination, and (ii) if the Executive's employment is terminated by reason of death or Disability, the Date of Termination shall be the date of death of the Executive or the Disability Effective Date, as the case may be.

6. **Obligations of the Company upon Termination**.

a) Death. If the Executive's employment is terminated by reason of the Executive's death during the Employment Period, this Agreement shall terminate without further obligations to the Executive's legal representatives under this Agreement, other than for (i) payment of the sum of the following amounts: (A) the Executive's Annual Base Salary through the Date of Termination to the extent not theretofore paid, (B) the product of (I) the Target Bonus for the fiscal year in which the Date of Termination occurs and (II) a fraction, the numerator of which is the number of days in the current fiscal year through the Date of Termination, and the denominator of which is 365, and (C) any accrued and unpaid Annual Bonus amounts, compensation or vacation pay, in each case, to the extent not yet paid by the Company (the amounts described in subparagraphs (A), (B) and (C) are hereafter referred to as "Accrued Obligations" and shall be paid to the Executive's estate or beneficiary, as applicable, in a lump sum in cash within 30 days of the Date of Termination), and (ii) any other benefits or compensation payable under any employee benefit plan in accordance with the applicable plans' terms, including, without limitation, any non-qualified plan; Subject to the provisions of Section 9 hereof, but, otherwise, anything herein to the contrary notwithstanding, the Executive's family shall be entitled to receive benefits at least equal to the most favorable benefits provided by the Company and any of its affiliated companies to surviving families of peer executives of the Company and such affiliated companies under such plans,

programs, practices and policies relating to family death benefits, if any, as in effect with respect to other peer executives and their families at any time during the one year period immediately preceding the Effective Date or, if more favorable to the Executive and/or the Executive's family, as in effect on the date of the Executive's death with respect to other peer executives of the Company and its affiliated companies and their families.

b) Disability. If the Executive's employment is terminated by reason of the Executive's Disability during the Employment Period, this Agreement shall terminate without further obligations to the Executive, other than for payment of the Accrued Obligations (which shall be paid in a lump sum in cash within 30 days of the Date of Termination). Subject to the provisions of Section 9 hereof, but, otherwise, anything herein to the contrary notwithstanding, the Executive shall be entitled after the Disability Effective Date to receive disability and other benefits at least equal to the most favorable of those provided by the Company and its affiliated companies to disabled executives and/or their families in accordance with such plans, programs, practices and policies relating to disability, if any, as in effect with respect to other peer executives and their families at any time during the one year period immediately preceding the Effective Date or, if more favorable to the Executive and/or the Executive's family, as in effect at any time thereafter with respect to other peer executives of the Company and its affiliated companies and their families.

c) Cause, Other than for Good Reason. If the Executive's employment shall be terminated by the Company for Cause or by the Executive other than for Good Reason (and other than by reason of his death or disability) during the Employment Period, this Agreement shall terminate without further obligations to the Executive other than the obligation to pay to the Executive Annual Base Salary through the Date of Termination. In such case, such amounts shall be paid to the Executive in a lump sum in cash within 30 days of the Date of Termination. The Executive shall, in such event, also be entitled to any benefits required by law that are not otherwise provided by this Agreement.

d) Termination Following a Change of Control by the Company without Cause or by the Executive for Good Reason. Following a Change of Control if the Executive is terminated by the Company without Cause or he resigns for Good Reason during the Employment Period, then the Executive shall be entitled to each and all of the following:

    i. the Company shall pay to the Executive in a lump sum in cash within 30 days after the Date of Termination (A) the Executive's Annual Base Salary through the Date of Termination to the extent not theretofore paid, (B) the product of (I) the Target Bonus for the fiscal year in which the Date of Termination occurs and (II) a fraction, the numerator of which is the number of days in the current fiscal year through the Date of Termination, and the denominator of which is 365, and (C) any accrued and unpaid Annual Bonus amounts, compensation or vacation pay, in each case, to the extent not yet paid by the Company

ii. the Company shall pay to the Executive a lump sum amount in cash within 30 days after the Date of Termination (such amount shall be hereinafter referred to as the "Change of Control Payment") equal to the product of (X) one point five (1.5) multiplied by the sum of (i) (Y) the Annual Base Salary for the fiscal year immediately preceding the Date of Termination and (ii) the greatest of (a) the average (annualized for any fiscal year consisting of less than twelve full months or with respect to which the Executive has been employed by the Company for less than twelve full months) bonus paid or that has been earned and accrued, but unpaid to the Executive by the Company and its affiliated companies in respect of the three fiscal years immediately preceding the fiscal year in which the Date of Termination occurs, (b) the Annual Bonus paid for the fiscal year immediately preceding the fiscal year in which the Date of Termination occurs, or (c) the Target Bonus for the fiscal year in which the Date of Termination occurs ; and

iii. the Company shall pay to the Executive in a lump sum in cash within 30 days the amount equal to one point five (1.5) times the Company share of the annual group medical and/or dental insurance premium for such coverage that was in place for the Executive immediately prior to the Date of Termination; and

iv. notwithstanding any other provisions to the contrary contained herein or in any option agreement, restricted stock agreement or other equity compensation agreement, between the Company and the Executive, or any stock option, restricted stock or other equity compensation plans sponsored by the Company, unless such agreement or plan expressly references and supercedes this Agreement, then all unvested options, restricted stock or stock appreciation rights which Executive then holds to acquire securities from the Company shall be immediately and automatically vested and/or exercisable as of the Date of Termination, and the Executive shall have the right to exercise any such options or stock appreciation rights for the longer of (A) the period of time provided for in the applicable equity award agreement or plan, or (B) the shorter of one year after the Date of Termination or the remaining term of the applicable equity award.

e) Termination by the Company Without Cause or by Executive for Good Reason. If the Executive's employment with the Company shall be terminated by the Company without Cause or by the Executive for Good Reason (as defined in Section 5(c) without regard to whether a Change of Control has occurred) at any time prior to the Effective Date, then the Executive shall be entitled to each and all of the following:

i. the Company shall pay the Executive within 30 days after the Date of Termination (A) the Executive's Annual Base Salary through the Date of Termination to the extent not theretofore paid, and (B) any accrued and unpaid Annual Bonus amounts, compensation or vacation pay, in each case, to the extent not yet paid by the Company

ii. the Company shall pay the Executive within 30 days after the Date of Termination the product of (I) the greater of (a) the average bonus paid or that has been earned and accrued, but unpaid to the Executive by the Company and its affiliated companies in respect of the three fiscal years immediately preceding the fiscal year in which the Date of Termination occurs, and (b) the Annual Bonus paid for the fiscal year immediately preceding the Date of Termination (both (a) and (b) annualized for any fiscal year consisting of less than twelve full months or with respect to which the Executive has been employed by the Company for less than twelve full months) and (II) a fraction, the numerator of which is the number of days in the current fiscal year through the Date of Termination, and the denominator of which is 365,

iii. the Company shall continue to pay the Executive his Base Salary divided by the number of payroll periods during the one year severance period for the period of one (1) year from the Date of Termination in accordance with its normal payroll practices and subject to applicable tax withholding; and

iv. To the extent the Executive participated in the Company's group medical/dental insurance immediately prior to the Date of Termination, if Executive elects to continue receiving group medical and/or dental insurance under the continuation coverage rules known as COBRA, the Company shall pay the Company share of the premium for such coverage that it pays for active and similarly-situated employees who receive the same type of coverage (single, family, or other) until the end of the period for which the Company is paying Executive his current base salary pursuant to Section 6(e)(iii).

f) Mitigation. The Executive shall not be required to mitigate the amount of any payment provided for in this Agreement by seeking other employment or otherwise and no such payment shall be offset or reduced by the amount of any compensation or benefits provided to the Executive in any subsequent employment.

g) Other Severance Benefits. The severance pay and benefits provided for in Section 6(e) shall be in lieu of any other severance or termination pay to which the Executive may be entitled under any Company severance or termination plan, program, practice or arrangement. The Executive's entitlement to any other compensation or benefits shall be determined in accordance with the Company's employee benefit plans and other applicable programs, policies and practices then in effect.

7. **Non-exclusivity of Rights**. Except as provided in Section 6, nothing in this Agreement shall prevent or limit the Executive's continuing or future participation in any benefit, bonus, incentive or other plans, programs, policies or practices, provided by the Company or any of its affiliated companies and for which the Executive may qualify, nor shall anything herein

limit or otherwise affect such rights as the Executive may have under any other agreements with the Company or any of its affiliated companies. Amounts which are vested benefits or which the Executive is otherwise entitled to receive under any plan, policy, practice or program of the Company or any of its affiliated companies at or subsequent to the Date of Termination shall be payable in accordance with such plan, policy, practice or program except as explicitly modified by this Agreement.

8. **Full Settlement**.

a) The Company's obligation to make the payments provided for in this Agreement and otherwise to perform its obligations hereunder shall not be affected by any set-off, counterclaim, recoupment, defense or other claim, right or action which the Company may have against the Executive or others. In no event shall the Executive be obligated to seek other employment or take any other action by way of mitigation of the amounts payable to the Executive under any of the provisions of this Agreement and, except as provided in Section 6(d)(ii), such amounts shall not be reduced whether or not the Executive obtains other employment.

b) Prior to the occurrence of a Change of Control, the Company agrees to reimburse the Executive for all legal fees and expenses which the Executive may reasonably incur as a result of any contest by the Company, the Executive or others of the validity or enforceability of, or liability under, any provision of this Agreement or any guarantee of performance thereof, if the Executive prevails in such contest. Following a Change of Control, the Company agrees to pay promptly as incurred, to the full extent permitted by law, all legal fees and expenses which the Executive may reasonably incur as a result of any contest (regardless of the outcome thereof) by the Company, the Executive or others of the validity or enforceability of, or liability under, any provision of this Agreement or any guarantee of performance thereof.

c) If there shall be any dispute between the Company and the Executive (i) in the event of any termination of the Executive's employment by the Company, whether such termination was for Cause, or (ii) in the event of any termination of employment by the Executive, whether Good Reason existed, then, unless and until there is a final, nonappealable judgment by a court of competent jurisdiction declaring that such termination was for Cause or that the determination by the Executive of the existence of Good Reason was not made in good faith, the Company shall pay all amounts, and provide all benefits, to the Executive and/or the Executive's family or other beneficiaries, as the case may be, that the Company would be required to pay or provide pursuant to Section 6(d) as though such termination were by the Company without Cause, or by the Executive with Good Reason; provided, however, that the Company shall not be required to pay any disputed amount pursuant to this paragraph except upon receipt of an undertaking by or on behalf of the Executive to repay all such amounts to which the Executive is ultimately adjudged by such court not to be entitled.

9. **280G Protection**.

a) In the event that the Executive shall become entitled to payment and/or benefits provided by this Agreement or any other amounts in the "nature of compensation" (whether pursuant to the terms of this Agreement or any other plan, arrangement or agreement with the Company, any person whose actions result in a change of ownership or effective control covered by Section 280G(b)(2) of the Internal Revenue Code (the "Code") or any person affiliated with the Company or such person) as a result of such change in ownership or effective control (collectively the "Company Payments"), and such Company Payments will be subject to the tax (the "Excise Tax") imposed by Section 4999 of the Code (and any similar tax that may hereafter be imposed by any taxing authority) the Company shall pay to the Executive the greater of the following, whichever gives the Executive the highest net after-tax amount (after taking into account federal, state, local and social security taxes at the maximum marginal rates) (x) the Company Payments or (y) one dollar less than the amount of the Company Payments that would subject the Executive to the Excise Tax. In the event that the Company Payments are required to be reduced pursuant to the foregoing sentence, then the Company Payments shall be reduced as mutually agreed between the Company and the Executive or, in the event the parties cannot agree, in the following order (1) any lump sum severance based on Base Salary or Annual Bonus, (2) any other cash amounts payable to the Executive, (3) any benefits valued as parachute payments; and (4) acceleration of vesting of any equity.

b) For purposes of determining whether any of the Company Payments will be subject to the Excise Tax and the amount of such Excise Tax, (x) the Company Payments shall be treated as "parachute payments" within the meaning of Section 280G(b)(2) of the Code, and all "parachute payments" in excess of the "base amount" (as defined under Code Section 280G(b)(3) of the Code) shall be treated as subject to the Excise Tax, unless and except to the extent that, in the opinion of the Company's independent certified public accountants appointed prior to any change in ownership (as defined under Section 280G(b)(2) of the Code) or tax counsel selected by such accountants or the Company (the "Accountants") such Company Payments (in whole or in part) either expressly do not constitute "parachute payments," represent reasonable compensation for services actually rendered within the meaning of Section 280G(b)(4) of the Code in excess of the "base amount" or are otherwise not subject to the Excise Tax, and (y) the value of any non-cash benefits or any deferred payment or benefit shall be determined by the Accountants. All determinations hereunder shall be made by the Accountants which shall provide detailed supporting calculations both to the Company and the Executive at such time as it is requested by the Company or the Executive. If the Accountants determine that payments under this Agreement must be reduced pursuant to this paragraph, they shall furnish the Executive with a written opinion to such effect. The determination of the Accountants shall be final and binding upon the Company and the Executive.

c) In the event of any controversy with the Internal Revenue Service (or other taxing authority) with regard to the Excise Tax, the Executive shall permit the Company to control issues related to the Excise Tax (at its expense), provided that such issues do

not potentially materially adversely affect the Executive, but the Executive shall control any other issues. In the event the issues are interrelated, the Executive and the Company shall in good faith cooperate so as not to jeopardize resolution of either issue, but if the parties cannot agree the Executive shall make the final determination with regard to the issues. In the event of any conference with any taxing authority regarding the Excise Tax or associated income taxes, the Executive shall permit the representative of the Company to accompany the Executive, and the Executive and the Executive's representative shall cooperate with the Company and its representative.

10. **Confidential Information**. The Executive shall hold in a fiduciary capacity for the benefit of the Company all secret or confidential information, knowledge or data relating to the Company or any of its affiliated companies, and their respective businesses, which shall have been obtained by the Executive during the Executive's employment by the Company or any of its affiliated companies and which shall not be or become public knowledge (other than by acts by the Executive or representatives of the Executive in violation of this Agreement). After termination of the Executive's employment with the Company, the Executive shall not, without the prior written consent of the Company or as may otherwise be required by law or legal process, communicate or divulge any such information, knowledge or data to anyone other than the Company and those designated by it. In no event shall an asserted violation of the provisions of this Section 10 constitute a basis for deferring or withholding any amounts otherwise payable to the Executive under this Agreement.

11. **Successors**.

a) This Agreement is personal to the Executive and without the prior written consent of the Company shall not be assignable by the Executive otherwise than by will or the laws of descent and distribution. This Agreement shall inure to the benefit of and be enforceable by the Executive's legal representatives.

b) This Agreement shall inure to the benefit of and be binding upon the Company and its successors and assigns.

c) The Company will require any successor (whether direct or indirect, by purchase, merger, consolidation or otherwise) to all or substantially all of the business and/or assets of the Company to assume expressly and agree to perform this Agreement in the same manner and to the same extent that the Company would be required to perform it if no such succession had taken place. The Company shall provide written evidence to the Executive to document compliance with the foregoing sentence within ten (10) business days of the Effective Date. As used in this Agreement, "Company" shall mean the Company as hereinbefore defined and any successor to its business and/or assets as aforesaid which assumes and agrees to perform this Agreement by operation of law, or otherwise. In addition, the Executive shall be entitled, upon exercise of any outstanding stock options or stock appreciation rights of the Company, to receive in lieu of shares of the Company's stock, shares of such stock or other securities of such successor as the holders of

shares of the Company's stock received pursuant to the terms of the merger, consolidation or sale.

12. **Compliance With Section 409A of the Internal Revenue Code**. To the extent applicable, it is intended that this Agreement comply with the provisions of Section 409A of the Code (hereinafter referred to as "Section 409A"). This Agreement shall be administered in a manner consistent with its intent, and any provision that would cause the Agreement to fail to satisfy Section 409A shall have no force and effect until amended to comply with Section 409A. Notwithstanding any provision of this Agreement to the contrary, in the event any payment or benefit hereunder is determined to constitute non-qualified deferred compensation subject to Section 409A, then to the extent necessary to comply with Section 409A, such payment or benefits shall not be made, provided or commenced until six (6) months after the Executive's "separation from service" as such phrase is defined for the purposes of Section 409A.

13. **Release.** The Executive agrees that, with the exception of the Accrued Obligations due to him in accordance with the terms hereunder, that the payment of any severance under this Agreement to the Executive by the Company, is subject to and conditioned on Executive executing a general release of the Company in a form and scope determined by the Company in its sole discretion (the "Release Agreement"), without Executive revoking such Release Agreement within fifty-two (52) days of the Date of Termination (the "Consideration Period") and provided that (a) if the Date of Termination occurs in one calendar year and the Consideration Period (including the payment date) expires during the following calendar year, then notwithstanding anything herein to the contrary, the payments of severance under Section 6(e) will be paid by the Company to the Executive in the second calendar year; (b) the Executive continues to comply with the provisions of the Non-Competition Agreement; and (c) prior to the expiration of the Consideration Period (i) Executive provides satisfactory evidence to the Company that he has returned all Company property, confidential information and documentation to the Company, and (ii) provides the Company with a signed written resignation of Executive's status as an officer of the Company or any of its affiliates, if applicable.

14. **Miscellaneous**.
    a) This Agreement shall be governed by and construed in accordance with the laws of the Commonwealth of Massachusetts, without reference to principles of conflict of laws. The captions of this Agreement are not part of the provisions hereof and shall have no force or effect. This Agreement may not be amended or modified otherwise than by a written agreement executed by the parties hereto or their respective successors and legal representatives.

b) All notices and other communications hereunder shall be in writing and shall be given by hand delivery to the other party or by registered or certified mail, return receipt requested, postage prepaid, addressed as follows:

If to the Executive:

<Address>If to the Company:

Idera Pharmaceuticals, Inc.
167 Sidney Street
Cambridge, MA 02139
Attention: Chief Executive Officer

or to such other address as either party shall have furnished to the other in writing in accordance herewith. Notices and communications shall be effective when actually received by the addressee.

c) The invalidity or unenforceability of any provision of this Agreement shall not affect the validity or enforceability of any other provision of this Agreement.

d) The Company may withhold from any amounts payable under this Agreement such Federal, state or local taxes as shall be required to be withheld pursuant to any applicable law or regulation.

e) The Executive's or the Company's failure to insist upon strict compliance with any provision hereof shall not be deemed to be a waiver of such provision or any other provision thereof.

f) This Agreement contains the entire understanding of the Company and the Executive with respect to the rights and other benefits that the Executive shall be entitled during the Employment Period, and in connection therewith shall supersede all prior oral and written communications with the Executive with respect thereto; provided, however, that the Invention, Non-Disclosure and Non-Competition Agreement, option or other equity agreements or other employment agreement by and between the Company and Executive shall remain in full force and effect and if the Company's separation policy would provide greater benefits to the Executive than this Agreement, then the Executive may elect to receive benefits under the Company's separation policy in lieu of the benefits provided hereunder. Nothing herein shall affect the application of the Company's separation policy in lieu of the benefits provided hereunder. Nothing herein shall affect the application of the Company's separation policy prior to the Effective Date.

g) The Executive and the Company acknowledge that, except as may otherwise be provided under this Agreement or any other written agreement between the Executive and the Company, prior to the Effective Date, the employment of the Executive by the Company is "at will" and may be terminated by either the Executive or the Company at any time. Notwithstanding anything contained herein, if during or prior to the Employment Period, the Executive shall terminate employment with the Company other than for Good Reason, then the Executive shall have no liability to the Company.

IN WITNESS WHEREOF, the Executive has hereunto set his hand and, pursuant to the authorization from its Board of Directors, the Company has caused these presents to be executed in its name on its behalf, all as of the day and year first above written.

[Signature page follows]

IDERA PHARMACEUTICALS, INC.

By: _____
Name:
Title:

EXECUTIVE

_____

EXHIBIT 31.1

CERTIFICATION OF CHIEF EXECUTIVE OFFICER PURSUANT TO EXCHANGE ACT RULES 13a-14 AND 15d-14, AS ADOPTED PURSUANT TO SECTION 302 OF SARBANES-OXLEY ACT OF 2002

I, Vincent J. Milano, certify that:

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

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

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

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

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

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

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

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

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

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

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

Dated: May 4, 2017

/s/ VINCENT J. MILANO
Vincent J. Milano
Chief Executive Officer

EXHIBIT 31.2

CERTIFICATION OF CHIEF FINANCIAL OFFICER PURSUANT TO EXCHANGE ACT RULES 13a-14 AND 15d-14, AS ADOPTED PURSUANT TO SECTION 302 OF SARBANES-OXLEY ACT OF 2002

I, Louis J. Arcudi, III certify that:

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

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

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

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

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

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

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

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

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

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

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

Dated: May 4, 2017

/s/ Louis J. Arcudi, III

Louis J. Arcudi, III

Chief Financial Officer

EXHIBIT 32.1

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

In connection with the Quarterly Report on Form 10-Q of Idera Pharmaceuticals, Inc. (the "Company") for the period ended March 31, 2017 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), the undersigned, Vincent J. Milano, Chief Executive Officer of the Company, hereby certifies, pursuant to 18 U.S.C. Section 1350, that to his knowledge:

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

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

A signed original of this written statement has been provided to Idera Pharmaceuticals, Inc. and will be retained by Idera Pharmaceuticals, Inc. and furnished to the Securities and Exchange Commission or its staff upon request.

Dated: May 4, 2017

/s/ VINCENT J. MILANO
Vincent J. Milano
Chief Executive Officer

EXHIBIT 32.2

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

In connection with the Quarterly Report on Form 10-Q of Idera Pharmaceuticals, Inc. (the "Company") for the period ended March 31, 2017 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), the undersigned, Louis J. Arcudi, III, Chief Financial Officer of the Company, hereby certifies, pursuant to 18 U.S.C. Section 1350, that to his knowledge:

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

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

A signed original of this written statement has been provided to Idera Pharmaceuticals, Inc. and will be retained by Idera Pharmaceuticals, Inc. and furnished to the Securities and Exchange Commission or its staff upon request.

Dated: May 4, 2017

/s/ LOUIS J. ARCUDI, III
Louis J. Arcudi, III
Chief Financial Officer