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

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	(I.R.S. Employer
incorporation or organization)	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

Class	Outstanding as of April 30, 2018
Common Stock, par value $.001 per share	217,310,991

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IDERA PHARMACEUTICALS, INC.

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NOTE REGARDING FORWARD-LOOKING STATEMENTS

This Quarterly Report on Form 10-Q contains forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, 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,” “pr “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 under Part I, Item 1A “Risk Factors” in our Annual Report on Form 10-K for the fiscal year ended December 31, 2017, which was filed with the Securities and Exchange Commission, or the SEC, on March 7, 2018. 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.

This Quarterly Report on Form 10-Q also contains statements about our proposed strategic combination with BioCryst Pharmaceuticals, Inc. Many risks and uncertainties could cause actual results to differ materially from these forward-looking statements with respect to the pending transaction. These risks, as well as other risks associated with the pending transaction, are more fully disclosed under “Risk Factors” in the joint proxy statement/prospectus that is included in the registration statement on Form S-4 (File No. 333-223255) that was filed by Nautilus Holdco, Inc. with the SEC, on March 29, 2018 in connection with the pending merger.

In addition, any forward-looking statements, including any statements about the proposed transaction, represent our estimates only as of the date that this Quarterly Report on Form 10-Q is filed with 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.

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PART I — FINANCIAL INFORMATION

Item 1. Financial Statements.

IDERA PHARMACEUTICALS, INC.

CONDENSED BALANCE SHEETS

(In thousands, except per share amounts)	March 31, 2018 (unaudited)	December 31, 2017*
ASSETS		
Current assets:		
Cash and cash equivalents	$ 107,459	$ 112,629
Prepaid expenses and other current assets	2,651	3,992
Total current assets	110,110	116,621
Property and equipment, net	1,320	1,472
Restricted cash and other assets	321	324
Total assets	$ 111,751	$ 118,417
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	$ 1,668	$ 1,334
Accrued expenses	10,224	8,000
Current portion of note payable	131	209
Current portion of deferred revenue	376	566
Total current liabilities	12,399	10,109
Other liabilities	468	613
Total liabilities	12,867	10,722
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 — 216,095 and 195,625 shares at March 31, 2018 and	216	196

December 31, 2017, respectively		
Additional paid-in capital	723,257	711,993
Accumulated deficit	(624,589)	(604,494)
Total stockholders' equity	98,884	107,695
Total liabilities and stockholders' equity	$ 111,751	$ 118,417

* The condensed consolidated balance sheet at December 31, 2017 has been derived from the audited financial statements at that date.

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

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IDERA PHARMACEUTICALS, INC.

CONDENSED STATEMENTS OF OPERATIONS AND COMPREHENSIVE LOSS

(UNAUDITED)

	Three Months Ended March 31,	
(In thousands, except per share amounts)	2018	2017
Alliance revenue	$ 255	$ 378
Operating expenses:		
Research and development	13,556	11,485
General and administrative	6,979	4,081
Total operating expenses	20,535	15,566
Loss from operations	(20,280)	(15,188)
Other income (expense):		
Interest income	211	153
Interest expense	(7)	(16)
Foreign currency exchange loss	(19)	(6)
Net loss	$ (20,095)	$ (15,057)
Net loss per share applicable to common stockholders - basic and diluted (Note 12)	$ (0.10)	$ (0.10)
Weighted-average number of common shares used in computing net loss per share applicable to common stockholders - basic and diluted	199,037	149,100
Comprehensive loss:		
Net loss	$ (20,095)	$ (15,057)
Other comprehensive income (loss):		
Unrealized gain on available-for-sale securities	—	16
Total other comprehensive income	—	16
Comprehensive loss	$ (20,095)	$ (15,041)

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

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IDERA PHARMACEUTICALS, INC.

CONDENSED STATEMENTS OF CASH FLOWS

(UNAUDITED)

	Three Months Ended March 31,	
(In thousands)	2018	2017
Cash Flows from Operating Activities:		
Net loss	$ (20,095)	$ (15,057)
Adjustments to reconcile net loss to net cash used in operating activities:		
Stock-based compensation	1,589	1,784
Issuance of common stock for services rendered	23	43
Accretion of discounts and premiums on investments	—	74
Depreciation and amortization expense	169	176
Changes in operating assets and liabilities:		
Prepaid expenses and other current assets	1,341	(2,205)
Accounts payable, accrued expenses, and other liabilities	2,416	(2,183)
Deferred revenue	(190)	(278)
Net cash used in operating activities	(14,747)	(17,646)
Cash Flows from Investing Activities:		
Proceeds from maturity of available-for-sale securities	—	16,720
Purchases of property and equipment	(14)	(30)
Net cash (used in) provided by investing activities	(14)	16,690
Cash Flows from Financing Activities:		
Proceeds from employee stock purchases	81	57
Proceeds from exercise of common stock warrants	9,591	—
Payments on note payable	(78)	(70)
Payments on capital lease	(3)	(4)
Net cash provided by (used in) financing activities	9,591	(17)
Net decrease in cash, cash equivalents and restricted cash	(5,170)	(973)
Cash, cash equivalents and restricted cash, beginning of period	112,940	80,978
Cash, cash equivalents and restricted cash, end of period	$ 107,770	$ 80,005

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

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IDERA PHARMACEUTICALS, INC.

CONDENSED STATEMENT OF STOCKHOLDERS' EQUITY

(UNAUDITED)

(In thousands, except per share amounts)	Common Stock Number of Shares	$0.001 Par Value	Additional Paid-In Capital	Accumulated Deficit	Total Stockholders' Equity
Balance, December 31, 2017	195,625	$ 196	$ 711,993	$ (604,494)	$ 107,695
Issuance of common stock under stock purchase plan	53	—	81	—	81
Issuance of common stock upon exercise of common stock warrants	20,406	20	9,571	—	9,591
Issuance of common stock for services rendered	11	—	23	—	23
Stock-based compensation	—	—	1,589	—	1,589
Net loss	—	—	—	(20,095)	(20,095)
Balance, March 31, 2018	216,095	$ 216	$ 723,257	$ (624,589)	$ 98,884

The accompanying notes are an integral part of these financial statements

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IDERA PHARMACEUTICALS, INC.

NOTES TO CONDENSED FINANCIAL STATEMENTS

March 31, 2018

(UNAUDITED)

Note 1. Business and Organization

Business Overview

Idera Pharmaceuticals, Inc. ("Idera" or the "Company"), a Delaware corporation, 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 nucleic acid chemistry 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 nucleic acid chemistry technology, the Company is developing drug candidates to turn off the messenger RNA ("mRNA") associated with disease causing genes.

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 has entered into and may explore additional collaborative alliances to support development and commercialization.

Agreement and Plan of Merger

As further described in Note 2, in January 2018, the Company entered into an Agreement and Plan of Merger with BioCryst Pharmaceuticals, Inc. and affiliated entities. However, as the merger has not yet been completed, the Company has prepared these financial statements as if the Company will remain an independent reporting company,

and accordingly, these financial statements do not include any of the potential accounting impacts that may result from the Agreement and Plan of Merger.

Liquidity and Financial Condition

As of March 31, 2018, the Company had an accumulated deficit of $624.6 million. The Company expects to incur substantial operating losses in future periods and will require additional capital as it seeks to advance its drug candidates through development to commercialization. The Company does not expect to generate product revenue, sales-based milestones or royalties until the Company successfully completes development and obtains marketing approval for the Company's drug candidates, either alone or in collaboration 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, that its existing cash and cash equivalents will enable the Company to fund its operations into the third quarter of 2019. The Company has and plans to continue to evaluate available alternatives to extend its operations beyond the third quarter of 2019.

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Note 2. Agreement and Plan of Merger

On January 21, 2018, the Company, BioCryst Pharmaceuticals, Inc., a Delaware corporation ("BioCryst"), Nautilus Holdco, Inc., a Delaware corporation and a direct, wholly owned subsidiary of BioCryst ("Holdco"), Island Merger Sub, Inc., a Delaware corporation and a direct, wholly owned subsidiary of Holdco ("Merger Sub A"), and Boat Merger Sub, Inc., a Delaware corporation and a direct, wholly owned subsidiary of Holdco ("Merger Sub B"), entered into an Agreement and Plan of Merger (the "Merger Agreement"). Pursuant to the Merger Agreement, and subject to the satisfaction or waiver of the conditions specified therein, (a) Merger Sub A will be merged with and into Idera (the "Idera Merger"), with Idera surviving as a wholly owned subsidiary of Holdco, and (b) Merger Sub B will be merged with and into BioCryst (the "BioCryst Merger", and, together with the Idera Merger, the "Mergers"), with BioCryst surviving as a wholly owned subsidiary of Holdco. Upon completion of the Mergers, Holdco will operate as a combined company under the name Valenscion Incorporated.

Under the terms of the Merger Agreement, each share of BioCryst common stock will be exchanged for 0.50 shares of Holdco stock and each share of Idera common stock will be exchanged for 0.20 shares of Holdco stock. The exchange ratio reflects an "at market" combination based upon the approximate 30-day average volume weighted trading prices for each company. On a proforma, fully diluted basis, giving effect to all dilutive stock options, units and warrants, BioCryst stockholders will own 51.6 percent of the stock of the combined company and Idera stockholders will own 48.4 percent.

The board of directors of each of Idera and BioCryst has unanimously approved the Merger Agreement and the transactions contemplated thereby and the required regulatory approvals have been received. However, the Mergers are subject to approval by the stockholders of both companies and satisfaction of other customary closing conditions, as specified in the Merger Agreement. A special meeting of Idera stockholders and a special meeting of BioCryst stockholders to vote on the proposal to adopt the Merger Agreement and the transactions contemplated thereby, including the Mergers, are expected to occur on July 10, 2018. Simultaneously with the execution of the Merger Agreement, Baker Brothers, a significant stockholder of each company, entered into a voting and support agreement and agreed to vote in favor of the transactions contemplated by the Merger Agreement. Baker Brothers owns approximately 18% of the issued and outstanding Idera common stock and approximately 14% of the issued and outstanding BioCryst common stock.

The foregoing description of the Merger Agreement is not a complete description of all the parties' rights and obligations under the Merger Agreement and is qualified in its entirety by reference to the Merger Agreement, which was filed as Exhibit 2.1 to the Company's Current Report on Form 8-K filed with the SEC on January 22, 2018.

Note 3. Summary of Significant Accounting Policies

Basis of Presentation

The accompanying unaudited financial statements included herein have been prepared by the Company in accordance with U.S. generally accepted accounting principles ("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 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, 2018 are not necessarily indicative of results that may be expected for the year ending December 31, 2018. 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, 2017 ("2017 Form 10-K"), which was filed with the SEC on March 7, 2018.

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Note 3. Summary of Significant Accounting Policies (Continued)

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, 2018 and December 31, 2017 consisted of cash and money market funds.

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, 2018 and December 31, 2017, the restricted cash amounted to $0.3 million and is recorded in “Restricted cash and other assets” in the accompanying balance sheets. The lease expires in August 2022.

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

(In thousands)	March 31, 2018	December 31, 2017
Cash and cash equivalents	$ 107,459	$ 112,629
Restricted cash	311	311
Cash, cash equivalents and restricted cash	$ 107,770	$ 112,940

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 4. The Company is required to disclose the estimated fair values of its financial instruments. The Company’s financial instruments consist of cash, cash equivalents, receivables and a note payable. The estimated fair values of these financial instruments approximate their carrying values as of March 31, 2018 and December 31, 2017. As of March 31, 2018 and December 31, 2017, 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 7 to the financial statements included in the 2017 Form 10-K. The note includes 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.

Revenue Recognition

Effective January 1, 2018, the Company adopted Accounting Standards Codification ("ASC") Topic 606, Revenue from Contracts with Customers, using the modified retrospective transition method. Under this method, the Company recognizes the cumulative effect of initially adopting ASC Topic 606, if any, as an adjustment to the opening balance of retained earnings. Additionally, under this method of adoption, the Company applies the guidance to all incomplete contracts in scope as of the date of initial application. This standard applies to all contracts with customers, except for contracts that are within the scope of other standards, such as leases, insurance, collaboration arrangements and financial instruments.

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Note 3. Summary of Significant Accounting Policies (Continued)

In accordance with ASC Topic 606, the Company recognizes revenue when its customer obtains control of promised goods or services, in an amount that reflects the consideration which the entity expects to receive in exchange for those goods or services. To determine revenue recognition for arrangements that the Company determines are within the scope of ASC Topic 606, it performs the following five steps:

(i) identify the contract(s) with a customer;
(ii) identify the performance obligations in the contract;
(iii) determine the transaction price;
(iv) allocate the transaction price to the performance obligations in the contract; and
(v) recognize revenue when (or as) the entity satisfies a performance obligation.

The Company only applies the five-step model to contracts when it determines that it is probable it will collect the consideration it is entitled to in exchange for the goods or services it transfers to the customer. At contract inception, once the contract is determined to be within the scope of ASC Topic 606, the Company assesses the goods or services promised within each contract and determines those that are performance obligations, and assesses whether each promised good or service is distinct. The Company then recognizes as revenue the amount of the transaction price that is allocated to the respective performance obligation when (or as) the performance obligation is satisfied.

Amounts received prior to satisfying the revenue recognition criteria are recognized as deferred revenue in the Company's balance sheet. Amounts expected to be recognized as revenue within the 12 months following the balance sheet date are classified as Current portion of deferred revenue. Amounts not expected to be recognized as revenue within the 12 months following the balance sheet date are classified as Deferred revenue, net of current portion.

Alliance Revenues

The Company's revenues have primarily been generated through collaborative research, development and/or commercialization agreements. The terms of these agreements may include payment to the Company of one or more of the following: nonrefundable, up-front license fees; research, development and commercial milestone payments; and other contingent payments due based on the activities of the counterparty or the reimbursement by licensees of costs associated with patent maintenance. Each of these types of revenue are recorded as Alliance revenues in the Company's statement of operations.

In determining the appropriate amount of revenue to be recognized as it fulfills its obligations under each of its agreements, the Company performs the following steps:

(i) identification of the promised goods or services in the contract;

(ii) determination of whether the promised goods or services are performance obligations including whether they are distinct in the context of the contract;
(iii) measurement of the transaction price, including the constraint on variable consideration;
(iv) allocation of the transaction price to the performance obligations; and
(v) recognition of revenue when (or as) the Company satisfies each performance obligation.

See Note 9, “Collaboration and License Agreements” for additional details surrounding the Company’s collaboration arrangements.

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Note 3. Summary of Significant Accounting Policies (Continued)

As part of the accounting for these arrangements, the Company allocates the transaction price to each performance obligation on a relative stand-alone selling price basis. The stand-alone selling price may be, but is not presumed to be, the contract price. In determining the allocation, the Company maximizes the use of observable inputs. When the stand-alone selling price of a good or service is not directly observable, the Company estimates the stand-alone selling price for each performance obligation using assumptions that require judgment. Acceptable estimation methods include, but are not limited to: (i) the adjusted market assessment approach, (ii) the expected cost plus margin approach, and (iii) the residual approach (when the stand-alone selling price is not directly observable and is either highly variable or uncertain). In order for the residual approach to be used, the Company must demonstrate that (a) there are observable stand-alone selling prices for one or more of the performance obligations and (b) one of the two criteria in ASC 606-10- 32-34(c)(1) and (2) is met. The residual approach cannot be used if it would result in a stand-alone selling price of zero for a performance obligation as a performance obligation, by definition, has value on a stand-alone basis.

An option in a contract to acquire additional goods or services gives rise to a performance obligation only if the option provides a material right to the customer that it would not receive without entering into that contract. Factors that the Company considers in evaluating whether an option represents a material right include, but are not limited to: (i) the overall objective of the arrangement, (ii) the benefit the collaborator might obtain from the arrangement without exercising the option, (iii) the cost to exercise the option (e.g. priced at a significant and incremental discount) and (iv) the likelihood that the option will be exercised. With respect to options determined to be performance obligations, the Company recognizes revenue when those future goods or services are transferred or when the options expire.

The Company’s revenue arrangements may include the following:

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

Milestone Payments: At the inception of an agreement that includes research and development milestone payments, the Company evaluates whether each milestone is considered probable of being achieved and estimates the amount to be included in the transaction price using the most likely amount method. If it is probable that a significant revenue reversal would not occur, the associated milestone value is included in the transaction price. Milestone payments that are not within the control of the Company or the licensee, such as regulatory approvals, are not considered probable of

being achieved until those approvals are received. The transaction price is then allocated to each performance obligation on a relative stand-alone selling price basis, for which the Company recognizes revenue as or when the performance obligations under the contract are satisfied. At the end of each subsequent reporting period, the Company re-evaluates the probability of achievement of such milestones and any related constraint, and if necessary, adjusts its estimate of the overall transaction price. Any such adjustments are recorded on a cumulative catch-up basis, which would affect Alliance revenues and earnings in the period of adjustment.

Research and Development Activities: If the Company is entitled to reimbursement from its collaborators for specified research and development activities or the reimbursement of costs associated with patent maintenance, the Company determines whether such funding would result in Alliance revenues or an offset to research and development expenses. Reimbursement of patent maintenance costs are recognized during the period in which the related expenses are incurred as Alliance revenues in the Company’s statement of operations.

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Note 3. Summary of Significant Accounting Policies (Continued)

Royalties: If the Company is entitled to receive sales-based royalties from its collaborator, including milestone payments based on the level of sales, and the license is deemed to be the predominant item to which the royalties relate, the Company recognizes revenue at the later of (i) when the related sales occur, provided the reported sales are reliably measurable, or (ii) when the performance obligation to which some or all of the royalty has been allocated has been satisfied (or partially satisfied). To date, the Company has not recognized any royalty revenue resulting from any of its collaboration and license arrangements.

Manufacturing Supply and Research Services: Arrangements that include a promise for future supply of drug substance, drug product or research services at the licensee's discretion are generally considered as options. The Company assesses if these options provide a material right to the licensee and if so, they are accounted for as separate performance obligations. If the Company is entitled to additional payments when the licensee exercises these options, any additional payments are recorded in Alliance revenues when the licensee obtains control of the goods, which is upon delivery, or as the services are performed.

The Company receives payments from its licensees based on schedules established in each contract. Upfront payments and fees are recorded as deferred revenue upon receipt, and may require deferral of revenue recognition to a future period until the Company performs its obligations under these arrangements. Amounts are recorded as accounts receivable when the Company's right to consideration is unconditional. The Company does not assess whether a contract has a significant financing component if the expectation at contract inception is such that the period between payment by the licensees and the transfer of the promised goods or services to the licensees will be one year or less.

Income Taxes

In accordance with ASC 270, Interim Reporting, and ASC 740, Income Taxes, the Company is required at the end of each interim period to determine the best estimate of its annual effective tax rate and then apply that rate in providing for income taxes on a current year-to-date (interim period) basis. For the three months ended March 31, 2018 and 2017, the Company recorded no tax expense or benefit due to the expected current year loss and its historical losses. The Company has not recorded its net deferred tax asset as of either March 31, 2018 or December 31, 2017 because it maintained a full valuation allowance against all deferred tax assets as of these dates as management has determined that it is not more likely than not that the Company will realize these future tax benefits. As of March 31, 2018 and December 31, 2017, the Company had no uncertain tax positions.

In December 2017, the Tax Cuts and Jobs Act ("TCJA") was signed into law. Among other things, the TCJA permanently lowers the corporate federal income tax rate to 21% from the existing maximum rate of 35%, effective for tax years including or commencing January 1, 2018. As a result of the reduction of the corporate federal income

tax rate to 21%, GAAP requires companies to revalue their deferred tax assets and deferred tax liabilities as of the date of enactment, with the resulting tax effects accounted for in the reporting period of enactment. This revaluation resulted in a provision of $27.6 million to income tax expense in and a corresponding reduction in the valuation allowance in the fourth quarter of 2017. As a result, there was no impact to the Company's statement of operations and comprehensive loss as a result of reduction in tax rates. The Company's preliminary estimate of the TCJA and the remeasurement of its deferred tax assets and liabilities is subject to the finalization of management's analysis related to certain matters, such as developing interpretations of the provisions of the TCJA, changes to certain estimates and the filing of the Company's tax returns. U.S. Treasury regulations, administrative interpretations or court decisions interpreting the TCJA may require further adjustments and changes in the Company's estimates. The final determination of the TCJA and the remeasurement of the Company's deferred assets and liabilities will be completed as additional information becomes available, but no later than one year from the enactment of the TCJA.

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Note 3. Summary of Significant Accounting Policies (Continued)

New Accounting Pronouncements

Recently Adopted Accounting Pronouncements

In May 2014, the Financial Accounting Standards Board ("FASB") issued ASU No. 2014-09, Revenue from Contracts with Customers (Topic 606), which was subsequently amended by several other ASU's related to Topic 606 to, among other things, defer the effective date and clarify various aspects of the new revenue guidance including principal versus agent considerations, identifying performance obligations, and licensing, and include other improvements and practical expedients (as amended, "ASU 2014-09"). The Company adopted ASU 2014-09 in the first quarter of 2018 using the modified retrospective transition method. See "Revenue Recognition" above. To date, the Company has derived its 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 and was evaluated separately under Topic 606. With respect to its license and collaboration agreements with Vivelix Pharmaceuticals, Ltd. ("Vivelix") and GlaxoSmithKline Intellectual Property Development Limited ("GSK"), there was no material impact to Alliance revenues for any of the years presented upon adoption of Topic 606. Additionally, there were no revisions to any balance sheet components of Alliance revenues such as accounts receivable and deferred revenues or beginning retained earnings as a result of the adoption of the modified retrospective method. The primary impact on the Company's financial statements was revised or additional disclosures were made with respect to revenues and cash flows arising from contracts with customers, which are included in Notes 8 and 9.

In January 2016, the FASB issued ASU No. 2016-01, Recognition and Measurement of Financial Assets and Financial Liabilities ("ASU 2016-01"). The amendments in ASU 2016-01 address certain aspects of recognition, measurement, presentation and disclosure of financial instruments. The Company adopted ASU 2016-01 in the first quarter of 2018. The adoption of this new standard did not have a material impact on the Company's financial position or results of operations.

In November 2016, the FASB issued ASU No. 2016-18, Statement of Cash Flows (Topic 230) — Restricted Cash ("ASU 2016-18"). The amendments in ASU 2016-18 require that a statement of cash flows explain the change during the period in the total of cash, cash equivalents, and amounts generally described as restricted cash and restricted cash equivalents. Accordingly, amounts generally described as restricted cash or restricted cash equivalents should be included with cash and cash equivalents when reconciling the beginning of period and end of period total amounts shown on the statement of cash flows. The Company adopted ASU 2016-18 in the first quarter of 2018, and the guidance has been retrospectively applied to all periods presented. The total of cash, cash equivalents and restricted cash is described earlier in this Note 3.

Recently Issued (Not Yet Adopted) Accounting Pronouncements

In February 2016, the FASB issued ASU No. 2016-02, Leases (Topic 842) (“ASU 2016-02”). ASU 2016-02 requires 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 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 GAAP which requires only capital leases to be recognized on the balance sheet, ASU 2016-02 will require both types of leases to be recognized on the balance sheet. This guidance is applicable to the Company's fiscal year beginning January 1, 2019. The Company is currently evaluating the effect that the adoption of ASU 2016-02 will have on its financial statements.

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Note 4. Fair Value Measurements

Assets and Liabilities Measured at Fair Value on a Recurring Basis

The Company applies the guidance in ASC 820, Fair Value Measurement, to account for financial assets and liabilities measured on a recurring basis. Fair value is measured 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. As such, fair value is a market-based measurement that is determined based on assumptions that market participants would use in pricing an asset or liability.

The Company uses a fair value hierarchy, which distinguishes between assumptions based on market data (observable inputs) and an entity's own assumptions (unobservable inputs). The guidance requires that fair value measurements be classified and disclosed in one of the following three categories:

- Level 1: Unadjusted quoted prices in active markets that are accessible at the measurement date for identical, unrestricted assets or liabilities;
- Level 2: Quoted prices in markets that are not active or inputs which are observable, either directly or indirectly, for substantially the full term of the asset or liability; and
- Level 3: Prices or valuation techniques that require inputs that are both significant to the fair value measurement and unobservable (i.e., supported by little or no market activity).

Determining which category an asset or liability falls within the hierarchy requires significant judgment. The Company evaluates its hierarchy disclosures each reporting period. There were no transfers between Level 1, 2 and 3 during the three months ended March 31, 2018.

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, 2018 and December 31, 2017 categorized by the level of inputs used in the valuation of each asset and liability:

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, 2018 and December 31, 2017 categorized by the level of inputs used in the valuation of each asset and liability.

	March 31, 2018			
(In thousands)	Total	Level 1	Level 2	Level 3
Assets				
Money market funds	$ 66,372	$ 66,372	$ —	$ —
Total Assets	$ 66,372	$ 66,372	$ —	$ —

Total Liabilities	$ —	$ —	$ —	$ —

	December 31, 2017			
(In thousands)	Total	Level 1	Level 2	Level 3
Assets				
Money market funds	$ 66,183	$ 66,183	$ —	$ —
Total Assets	$ 66,183	$ 66,183	$ —	$ —
Total Liabilities	$ —	$ —	$ —	$ —

The Level 1 assets consist of money market funds, which are actively traded daily.

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Note 5. Property and Equipment

At March 31, 2018 and December 31, 2017, property and equipment, net, consisted of the following:

(In thousands)	March 31, 2018	December 31, 2017
Leasehold improvements	$ 671	$ 671
Laboratory equipment and other	5,265	5,261
Total property and equipment, at cost	5,936	5,932
Less: Accumulated depreciation and amortization	4,616	4,460
Property and equipment, net	$ 1,320	$ 1,472

Depreciation and amortization expense on property and equipment was approximately $0.2 million in each of the three months ended March 31, 2018 and 2017. There were no non-cash property additions during the three months ended March 31, 2018 and less than $0.1 million in non-cash property additions during the three months ended March 31, 2017.

Note 6. Accrued Expenses

At March 31, 2018 and December 31, 2017, accrued expenses consisted of the following:

(In thousands)	March 31, 2018	December 31, 2017
Payroll and related costs	$ 1,569	$ 3,108
Clinical and nonclinical trial expenses	5,177	3,495
Professional and consulting fees	3,328	1,317
Other	150	80
Total Accrued expenses	$ 10,224	$ 8,000

Note 7. Stockholders’ Equity

Common Stock Warrants

In connection with various financing transactions, the Company has issued warrants to purchase shares of the Company's common stock. The Company accounts for warrants as equity instruments, derivative liabilities, or liabilities, depending on the specific terms of the warrant. As of March 31, 2018 and December 31, 2017, all of the Company's outstanding warrants were equity-classified.

The following table summarizes outstanding warrants to purchase shares of the Company's common stock as of March 31, 2018 and December 31, 2017:

	Number of Shares			
Description	March 31, 2018	December 31, 2017	Weighted-Average Exercise Price	Expiration Date
Issued in May 2013 financing (1)	1,200,000	21,606,327	0.47	May 2018
Issued in May 2013 financing (pre-funded)	15,816,327	15,816,327	0.01	May 2020
Issued in September 2013 financing	4,175,975	4,175,975	0.01	Sep 2020
Issued in February 2014 financing	2,158,750	2,158,750	0.01	Feb 2021
Total	23,351,052	43,757,379		

(1) Subsequent to March 31, 2018, the holder of the remaining May 2013 financing warrants, a related party, exercised these warrants as more fully described in Note 13.

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Note 7. Stockholders' Equity (Continued)

The table below is a summary of the Company's warrant activity for the three months ended March 31, 2018:

	Number of Warrants	Weighted-Average Exercise Price
Outstanding at December 31, 2017	43,757,379	$ 0.24
Issued	—	—
Exercised (1)	(20,406,327)	0.47
Expired	—	—
Outstanding at March 31, 2018	23,351,052	$ 0.03

(1) During the three months ended March 31, 2018, a related party exercised certain of these warrants as more fully described in Note 11.

Note 8. Alliance Revenue

Alliance revenue for the three months ended March 31, 2018 and 2017 represents revenue from contracts with customers accounted for in accordance with ASC Topic 606, which the Company adopted in the first quarter of 2018, as more fully described in Note 3. There was no impact to Alliance revenue previously recognized by the Company as a result of the adoption of ASC Topic 606.

For the three months ended March 31, 2018 and 2017, Alliance revenue in the accompanying statements of operations and comprehensive loss is comprised of the following:

	Three months ended March 31,	
(In thousands)	2018	2017
GSK collaboration (1)	$ 142	$ 371
Vivelix collaboration (2)	56	—
Other (3)	57	7
Total Alliance revenue	$ 255	$ 378

(1) For the three months ended March 31, 2018, revenue recognized primarily relates to the amortization of the deferred up-front payment received at inception of the GSK Agreement, as more fully described in Note 9. For the three months ended March 31, 2017, revenue recognized includes $0.3 million related to the amortization of the deferred up-front payment and $0.1 million related to additional research services provided in connection with the arrangement.

(2) For the three months ended March 31, 2018, revenue recognized relates to services provided under the research program provided for under the Vivelix Agreement, as more fully described in Note 9.

(3) For each of the three months ended March 31, 2018 and 2017, revenue recognized relates to collaborations which are not material to our current operations nor expected to be material in the future, including reimbursements by licensees of costs associated with patent maintenance.

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Note 8. Alliance Revenue (Continued)

The following table presents changes in the Company's contract assets and liabilities during the three months ended March 31, 2018 and 2017:

	Three months ended March 31, 2018			
(In thousands)	Beginning	Additions	Deductions	Ending
Contract assets	$ —	$ —	$ —	$ —
Contract liabilities:				
Deferred revenue	$ 566	$ —	$ (190)	$ 376

	Three months ended March 31, 2017			
(In thousands)	Beginning	Additions	Deductions	Ending
Contract assets	$ —	$ —	$ —	$ —
Contract liabilities:				
Deferred revenue	$ 1,263	$ —	$ (278)	$ 985

During the three months ended March 31, 2018 and 2017, the Company recognized Alliance revenues of $0.2 million and $0.3 million, respectively, as a result of changes in the contract liability balances associated with its contracts with customers. Revenue recognized during both the three months ended March 31, 2018 and 2017 were included in the contract liability at the beginning of each respective period. As of March 31, 2018, contract liabilities consisted of deferred revenue related entirely to the GSK Agreement and were included in Current portion of deferred revenue in the accompanying condensed balance sheet.

See Note 9 for additional details regarding the Company's material collaboration arrangements.

Note 9. Collaboration and License Agreements

Collaboration with Vivelix

In November 2016, the Company entered into an exclusive license and collaboration agreement with Vivelix pursuant to which the Company granted Vivelix worldwide rights to develop and market IMO-9200, an antagonist of TLR7, TLR8, and TLR9, for non-malignant gastrointestinal disorders (the "GI Field" or "Field" as defined in the Vivelix Agreement), and certain back-up compounds to IMO-9200 (the "Vivelix Agreement"). The Company was previously

developing IMO-9200 for potential use in selected autoimmune disease indications. However, the Company determined not to proceed with internal 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 the Company. Under the terms of the Vivelix Agreement, Vivelix is solely responsible for the development and commercialization of IMO-9200 and any designated back-up compounds. In connection with the Vivelix Agreement, Idera also transferred certain drug material to Vivelix for Vivelix's use in its development activities.

In accordance with the Vivelix Agreement, a Joint Research Committee ("JRC") was formed with equal representation from Idera and Vivelix. The responsibilities of the JRC, include, but are not limited to, monitoring the progress of the research program, advising on the designation of back-up compounds, sharing information between the parties and dealing with disputes that may arise between the parties. If a dispute cannot be resolved by the JRC, Vivelix has final decision making authority.

If requested by Vivelix pursuant to the Vivelix Agreement, Idera will create, characterize and perform research on back-up compounds (the "Research Program"). Such activity is to be mutually agreed upon and moderated by the JRC. The research period commenced with the execution of the agreement and may last for up to three years. During the research period, the parties will agree on the number of full time equivalents to work on the program. Vivelix will reimburse Idera at an annual market rate for the services rendered. Additionally, Vivelix has the option to license back-up compounds that were the subject of the Research Program ("Designated Back-up Compound License Option").

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Note 9. Collaboration and License Agreements (Continued)

Vivelix has certain rights under the agreement whereby it may exercise (i) the right of first refusal to develop and commercialize products in any available field ("Right of First Refusal"), (ii) the right of first negotiation to obtain an exclusive license for any compound controlled by Idera that has activity in the field of inflammatory bowel disease ("Right of First Negotiation") and (iii) the right to request an expanded Field beyond the GI Field ("Expanded Field Option").

Under the terms of the Vivelix Agreement, the Company received an upfront, non-refundable fee of $15 million. In addition, the Company will be eligible for future IMO-9200 related development, regulatory and sales milestone payments totaling up to $140 million, including development and regulatory milestones totaling up to $65 million and sales milestones totaling up to $75 million, and escalating royalties ranging from the mid single-digits to low double-digits of global net sales, which percentages are subject to reduction under agreed upon circumstances. As it relates to back-up compounds, the Company will be eligible for related designation payments and development, regulatory and sales milestone payments totaling up to $52.5 million, including development and regulatory milestones totaling up to $35 million and sales milestones totaling up to $17.5 million and escalating royalties ranging from the mid single-digits to low double-digits of global net sales, which percentages are subject to reduction under agreed upon circumstances. Under the terms of the agreement and if requested by and at Vivelix's expense, the Company is responsible for performing research services related to the back-up compounds.

At the effective date of the Vivelix Agreement, Baker Bros. Advisors LP and certain of its affiliated funds (collectively, "Baker Brothers") beneficially owned approximately 7.0% of the Company's outstanding common stock. Baker Brothers also owned a controlling financial interest of Vivelix at the effective date of the Vivelix Agreement and as of December 31, 2017. Affiliates of Baker Brothers constitute two of the four directors on the board of directors of Vivelix and two of the seven directors on the board of directors of the Company. However, the boards of the Company and Vivelix share no common board members.

Accounting Analysis under ASC 606

In evaluating the Vivelix Agreement in accordance with ASC Topic 606, the Company concluded that the contract counterparty, Vivelix, is a customer. The Company identified the following performance obligations as of the inception of agreement: (i) a research and commercialization license for IMO-9200 and back-up compounds to IMO-9200 (the "IMO-9200 License") and (ii) drug materials transferred, which were both deemed to be distinct. The Company determined that participation in the JRC was deemed immaterial in the context of the contract. Consistent with the guidance under ASC 606-10-25-16A, the Company disregarded immaterial promised goods and services when determining performance obligations.

The Company concluded that the IMO-9200 License was distinct within the context of the contract (i.e. separately identifiable) because it has stand-alone value from other promised goods and services as Vivelix could benefit from the IMO-9200 License on a stand-alone basis and sell the compound in the market without any additional involvement or participation from Idera. Additionally, Idera has no further obligations related to the IMO-9200 License. In the event that Vivelix does not make a designated compound payment, the license to back-up compounds reverts back to Idera at the end of the research term at no cost or payment by either party. The services provided under the Research Program relate to the back-up compounds and Vivelix would be able to conduct research and development activities with external third parties, as IMO-9200 is at an advanced enough stage where Idera's expertise would not be required. Accordingly, the IMO-9200 License is a separate performance obligation.

The Company concluded that the drug materials transferred identified at the inception are also distinct within the context of the contract (i.e. separately identifiable) because they have standalone value from other promised goods and services based on their nature. Accordingly, the drug materials transferred are a separate performance obligation.

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Note 9. Collaboration and License Agreements (Continued)

Allocable arrangement consideration at inception of the Vivelix Agreement was comprised of the up-front payment of $15 million. The $15 million was allocated based on the relative stand-alone selling prices of each performance obligation. Allocated revenue associated with the IMO-9200 License was recognized at the inception of the Vivelix Agreement in the fourth quarter of 2016 as Vivelix was granted an exclusive, perpetual license to develop and commercialize IMO-9200 and certain back-up compounds to IMO-9200, subject to certain designation milestone and royalty payments, and the performance obligations of Idera under the agreement were extinguished at that point. Allocable revenue associated with drug materials transferred shortly after the inception of the agreement was recognized upon delivery, also in the fourth quarter of 2016.

At inception of the contract, the transaction price included only the $15.0 million up-front consideration received. None of the development and commercialization milestones were included in the transaction price, as all milestone amounts were fully constrained. As part of its evaluation of the constraint, the Company considered numerous factors, including that receipt of the milestones is outside the control of the Company and contingent upon success in future clinical trials and the licensee's efforts. Similarly, other variable consideration related to services that may be provided under the Research Program and back-up compound designation payments were fully constrained. Any consideration related to sales-based royalties will be recognized when the related sales occur, provided that the reported sales are reliably measurable and the Company has no remaining performance obligations, as such sales were determined to relate predominantly to the license granted to Vivelix and therefore have also been excluded from the transaction price. The Company will re-evaluate the transaction price in each reporting period and as uncertain events are resolved or other changes in circumstances occur.

Revenue associated with goods and services provided to Vivelix under the Research Program have been immaterial to date and such revenue is recognized as the related performance obligations under each research project are satisfied. See Note 8 for details on revenue recognized in connection with the Company's collaboration with Vivelix for both the three months ended March 31, 2018 and 2017.

Collaboration with GSK

In November 2015, the Company entered into a collaboration and license agreement with GSK to license, research, develop and commercialize pharmaceutical compounds from the Company's nucleic acid chemistry 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, which is estimated to take 36 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.

The GSK Agreement also provided GSK with the option to select up to two additional targets at any time during the first two years of the GSK Agreement for further research under mutually agreed upon research plans. Upon selecting additional targets, GSK then had the option to 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. GSK did not select any additional targets for research through expiry of the option period.

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.

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Note 9. Collaboration and License Agreements (Continued)

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. Additionally, the Company was eligible to receive a total of up to approximately $100 million in license, research, clinical development and commercialization milestone payments, of which $9 million of these milestone payments would have been payable by GSK upon the identification of the additional targets, the completion of current and future research plans and the designation of development candidates and $89 million would have been payable by GSK upon the achievement of clinical milestones and commercial milestones. As a result of GSK not selecting additional targets during the two-year option period, the Company is now only eligible to receive a total of up to approximately $20 million in license, research, clinical development and commercialization milestone payments, of which $1 million of these milestone payments would be payable by GSK upon the designation of a development candidate from the initial target and $17 million would be 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 5% on annual net sales, as defined in the GSK Agreement.

Accounting Analysis under ASC 606

In evaluating the GSK Agreement in accordance with ASC Topic 606, the Company concluded that the contract counterparty, GSK, is a customer. The Company identified the following performance obligations as of the inception of the agreement: (i) research services, combined with the license for Idera's proprietary technology related to the initial target (collectively, the "Collaboration License and Research Services") and (ii) daily options to extend the Collaboration License and Research Services. The Company determined that participation in the JSC and materials transferred were deemed immaterial in the context of the contract. Consistent with the guidance under ASC 606-10-25-16A, the Company disregarded immaterial promised goods and services when determining performance obligations.

The Company concluded that the research services related to the initial target and collaboration license to the Company's proprietary technology related to the initial target were not capable of being distinct as the collaboration license related to the initial target is highly interdependent upon the research services to be provided related to the initial target. As it relates to the assessment of standalone value, the Company 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. Similarly, the Company concluded that the daily option to extend the collaboration license and the daily option to extend the research services were also highly interdependent as the license has no value to GSK without the accompanying research services using the Company's proprietary technology. Accordingly, the Collaboration License and Research Services were determined to represent a single performance obligation and the daily options to extend the Collaboration License and Research Services were determined to represent a single performance obligation. 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.

Allocable arrangement consideration at inception of the GSK Agreement was comprised of the up-front payment of $2.5 million. The $2.5 million was allocated based on the relative stand-alone selling prices of each performance obligation, calculated based on the expected period of time over which the initial license term will be in place, as well as the expected period of time over which the optional renewals occur. The consideration allocated to the Collaboration License and Research Services will be recognized over time as GSK is receiving the benefit of the Company’s expertise and know-how on an on-going basis as the research progresses towards the goal of the development candidate designation for the initial target. The exercise of the daily options to extend the Collaboration License and Research Services are treated as a continuation of the contract and allocated consideration is recognized point-in-time upon commencement of each daily exercise.

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Note 9. Collaboration and License Agreements (Continued)

At inception of the contract, the transaction price included only the $2.5 million up-front consideration received. None of the development and commercialization milestones were included in the transaction price, as all milestone amounts were fully constrained. As part of its evaluation of the constraint, the Company considered numerous factors, including that receipt of the milestones is outside the control of the Company and contingent upon success in future clinical trials and the licensee's efforts. Any consideration related to sales-based royalties will be recognized when the related sales occur, provided that the reported sales are reliably measurable and the Company has no remaining performance obligations, as such sales were determined to relate predominantly to the license granted to GSK and therefore have also been excluded from the transaction price. The Company will re-evaluate the transaction price in each reporting period and as uncertain events are resolved or other changes in circumstances occur.

The up-front payment of $2.5 million was recorded as deferred revenue in the Company's balance sheet upon receipt and is currently being recognized as revenue on a straight line basis over the estimated 36 month research plan period, which approximates the timing in which performance obligations are satisfied. See Note 8 for details on revenue recognized in connection with the Company's collaboration with GSK for both the three months ended March 31, 2018 and 2017.

Note 10. Stock-Based Compensation

Equity Compensation Plans

2013 Stock Incentive Plan

The Company's board of directors adopted the 2013 Stock Incentive Plan (as amended to date, the "2013 Plan"), which was approved by the Company's stockholders effective July 26, 2013. The 2013 Plan is intended to further align the interests of the Company and its stockholders with its employees, including its officers, non-employee directors, consultants and advisers by providing equity-based incentives. The 2013 Plan allows for the issuance of up to such number of shares of the Company's common stock as equal to (i) 25,224,460 shares of common stock; plus (ii) such additional number of shares of common stock (up to 6,946,978 shares) as is equal to the sum of the number of shares of common stock subject to awards granted under the Company's 2005 Stock Incentive Plan (the "2005 Plan") or the Company's 2008 Stock Incentive Plan (the "2008 Plan" and, together with the 2005 Plan, the "Existing Plans") which awards expire, terminate or are otherwise surrendered, canceled, forfeited or repurchased by the Company at their original issuance price pursuant to a contractual repurchase right (subject, however, in the case of incentive stock options to any limitations of the Internal Revenue Code).

As of March 31, 2018, options to purchase a total of 16,756,736 shares of common stock were outstanding and up to 10,114,740 shares of common stock remained available for grant under the 2013 Plan. The Company has not made any awards pursuant to other equity incentive plans, including the Existing Plans, since the Company's stockholders approved the 2013 Plan. As of March 31, 2018, options to purchase a total of 4,138,937 shares of common stock were outstanding under these earlier plans.

In addition, as of March 31, 2018, non-statutory stock options to purchase an aggregate of 3,321,875 shares of common stock were outstanding that were issued outside of the 2013 Plan to certain employees in 2017, 2015 and 2014 pursuant to the Nasdaq inducement grant exception as a material component of new hires' employment compensation.

2017 Employee Stock Purchase Plan

The Company's board of directors adopted the 2017 Employee Stock Purchase Plan (the "2017 ESPP") which was approved by the Company's stockholders and became effective on June 7, 2017. The 2017 ESPP provides for the issuance of up to 500,000 shares of common stock to participating employees of the Company or its subsidiaries. Participation is limited to employees that would not own 5% or more of the total combined voting power or value of the stock of the Company after the grant. As of March 31, 2018, 403,342 shares remained available for issuance under the 2017 ESPP.

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Note 10. Stock-Based Compensation (Continued)

For the three months ended March 31, 2018 and 2017, the Company issued 53,619 and 41,847 shares of common stock, respectively, under the 2017 ESPP and the Company's 1995 Employee Stock Purchase Plan and received proceeds of approximately $0.1 million during each period, as a result of employee stock purchases.

Accounting for Stock-based Compensation

The Company recognizes non-cash compensation expense for stock-based awards under the Company's equity incentive plans over an award's requisite service period, or vesting period, using the straight-line attribution method, based on their grant date fair value determined using the Black-Scholes option-pricing model. The Company also recognizes non-cash compensation for stock purchases made under the 2017 ESPP. The fair value of the discounted purchases made under the Company's 2017 ESPP is calculated using the Black-Scholes option-pricing model. The fair value of the look-back provision plus the 15% discount is recognized as compensation expense over each plan period.

Total stock-based compensation expense attributable to stock-based payments made to employees and directors and employee stock purchases included in operating expenses in the Company's statements of operations for the three months March 31, 2018 and 2017 was as follows:

	Three Months Ended March 31,	
(in thousands)	2018	2017
Stock-based compensation:		
Research and development		
Employee Stock Purchase Plans	$ 22	$ 22
Equity Incentive Plans	556	714
	$ 578	$ 736
General and administrative		
Employee Stock Purchase Plans	$ 14	$ 19
Equity Incentive Plans	997	1,029
	$ 1,011	$ 1,048
Total stock-based compensation expense	$ 1,589	$ 1,784

During the three months ended March 31, 2018 and 2017, the weighted average fair market value of stock options granted was $1.24 and $0.99, respectively. The following weighted average assumptions apply to the options to purchase 4,116,800 and 3,422,000 shares of common stock granted to employees and directors during the three months ended March 31, 2018 and 2017, respectively:

	Three Months Ended March 31,	
	2018	2017
Average risk free interest rate	2.1%	1.7%
Expected dividend yield	—	—
Expected lives (years)	3.8	3.9
Expected volatility	74.9%	86.9%
Weighted average exercise price (per share)	$ 2.24	$ 1.59

All options granted during three months ended March 31, 2018 were granted at exercise prices equal to the fair market value of the common stock on the dates of grant.

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Note 10. Stock-Based Compensation (Continued)

Stock Option Activity

The following table summarizes stock option activity for the three months ended March 31, 2018:

($ in thousands, except per share data)	Stock Options	Weighted-Average Exercise Price	Weighted-Average Remaining Contractual Life (in years)	Aggregate Intrinsic Value
Outstanding at December 31, 2017	21,402,200	$ 2.94	6.5	$ 5,805
Granted	4,116,800	2.24		
Exercised	—	—		
Forfeited	(894,377)	2.46		
Expired	(407,075)	11.09		
Outstanding at March 31, 2018 (1)	24,217,548	$ 2.70	6.7	$ 3,716
Exercisable at March 31, 2018	14,734,826	$ 2.95	5.4	$ 2,998

(1) Includes both vested stock options as well as unvested stock options for which the requisite service period has not been rendered but that are expected to vest based on achievement of a service condition.

The fair value of options that vested during the three months ended March 31, 2018 was $2.1 million. As of March 31, 2018, there was $11.1 million of unrecognized compensation cost related to unvested options, which the Company expects to recognize over a weighted average period of 2.6 years.

Note 11. Related Party Transactions

Overview of Related Parties

Youssef El Zein, a member of the Company’s Board until his resignation in October 2017, is a director and controlling stockholder of Pillar Invest Corporation (“Pillar Invest”), which is the general partner of Pillar Pharmaceuticals I, L.P. (“Pillar I”), Pillar Pharmaceuticals II, L.P. (“Pillar II”), Pillar Pharmaceuticals III, L.P. (“Pillar III”), Pillar Pharmaceuticals IV, L.P. (“Pillar IV”) and Pillar Pharmaceuticals V, L.P. (“Pillar V”) and limited partner of Pillar I, Pillar II, Pillar III, Pillar IV and Pillar V. Entities affiliated with Pillar Invest and Participations Besancon (“Besancon”), an investment fund advised by Pillar Invest having no affiliation with Mr. El Zein, Pillar I, Pillar II, Pillar III, Pillar IV, Pillar V or Pillar Invest (collectively, the “Pillar Investment Entities”), owned approximately 12% of the Company's common stock

as of March 31, 2018.

Julian C. Baker, a member of the Company's Board, is a principal of Baker Bros. Advisors, LP. Baker Bros. Advisors, LP and certain of its affiliated funds (collectively, "Baker Brothers") owned approximately 18% of the Company's common stock as of March 31, 2018. Additionally, one of the Company's directors, Kelvin M. Neu, is an employee of Baker Bros. Advisors, LP as of March 31, 2018.

Pillar Investment Entities

As of March 31, 2018, Besancon held warrants to purchase up to 1,200,000 shares of the Company's common stock at an exercise price of $0.47 per share. In April 2018, Besancon exercised these warrants for a total exercise price of approximately $0.6 million.

Baker Brothers

During the three months ended March 31, 2018, Baker Brothers exercised warrants to purchase 20,316,327 shares of the Company's common stock at an exercise price of $0.47 per share for a total exercise price of approximately $9.5 million.

As of March 31, 2018, Baker Brothers held pre-funded warrants to purchase up to 22,151,052 shares of the Company's common stock at an exercise price of $0.01 per share.

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Note 11. Related Party Transactions (Continued)

Board Fees Paid in Stock

Pursuant to the Company's director compensation program, in lieu of director board and committee fees incurred of less than $0.1 million during both the three months ended March 31, 2018 and 2017, the Company issued 13,349 and 12,917 shares of common stock, respectively, to certain of its directors. Director board and committee fees are paid in arrears (including fees paid in stock) and the number of shares issued was calculated based on the market closing price of the Company's common stock on the issuance date.

Note 12. Net Loss per Common Share

Basic and diluted net loss per common share applicable to common stockholders is calculated by dividing net loss applicable to common stockholders by the weighted-average number of shares of common stock outstanding during the period, without consideration of common stock equivalents. The Company's potentially dilutive shares, which include outstanding stock option awards, common stock warrants and convertible preferred stock, are considered to be common stock equivalents and are only included in the calculation of diluted net loss per share when their effect is dilutive. For the three months ended March 31, 2018 and 2017, diluted net loss per common share applicable to common stockholders was the same as basic net loss per common share applicable to common stockholders as the effects of the Company's potential common stock equivalents are antidilutive.

Total antidilutive securities that were excluded from the calculation of diluted net loss per share, due to their anti-dilutive effect, were 47,570,526 and 72,913,781 as of March 31, 2018 and 2017, respectively, and consisted of stock options, preferred stock and warrants.

Note 13. 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.

Common Stock Warrants

In April 2018, Besancon exercised warrants to purchase 1,200,000 shares of the Company's common stock at an exercise price of $0.47 per share for a total exercise price of approximately $0.6 million.

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

The following discussion and analysis of our financial condition and results of operations should be read in conjunction with:

- our unaudited condensed financial statements and accompanying notes included in Part I, Item 1 of this Quarterly Report on Form 10-Q; and
- our audited financial statements and accompanying notes included in our Annual Report on Form 10-K for 2017, or our 2017 Form 10-K, as well as the information contained under the heading "Management's Discussion and Analysis of Financial Condition and Results of Operations" in our 2017 Form 10-K.

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 nucleic acid chemistry 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 nucleic acid chemistry technology, we are developing drug candidates to turn off the messenger RNA, or mRNA, associated with disease causing genes.

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 have entered into and may explore additional 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-targeted clinical-stage drug candidates are tilsotolimod (IMO-2125) and IMO-8400. Tilsotolimod is an agonist of TLR9 and IMO-8400 is an antagonist of TLR7, TLR8 and TLR9.

We are developing tilsotolimod, via intratumoral injection, for the treatment of anti-PD1 refractory metastatic melanoma in combination with ipilimumab, an anti-CTLA4 antibody marketed as Yervoy® by Bristol-Myers Squibb Company. We are also investigating the combination of intratumoral tilsotolimod in combination with pembrolizumab for the treatment of anti-PD1 refractory metastatic melanoma and tilsotolimod in various solid tumors as monotherapy. We are developing IMO-8400 for the treatment of dermatomyositis.

Nucleic Acid Chemistry Technology Platform

We are developing our nucleic acid chemistry technology to “turn off” the mRNA associated with disease causing genes. Our focus is on creating candidates targeted to specific genes to treat cancer and rare diseases.

We had selected IDRA-008 as our first nucleic acid chemistry research program candidate. IDRA-008 targets the Apolipoprotein C-III (APOC-III) gene and was being developed for the treatment of Familial Chylomicronemia Syndrome (FCS) and Familial Partial Lipodystrophy (FPL) which had available pre-clinical animal models and well-known clinical endpoints. During the first quarter of 2018, we completed our pre-clinical analysis for IDRA-008 and based upon the outcome of pre-clinical pharmacology studies, including a comparative pharmacology study with

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the competitive development asset Volanesorsen, and IND-enabling safety evaluation, we made a data-driven decision to not advance IDRA-008 into clinical development. We are currently conducting analysis throughout our research portfolio to identify other candidates for future clinical development based on our nucleic acid technology expertise and potential strategic commercial opportunity.

Agreement and Plan of Merger

As further described in Note 2 to the condensed financial statements appearing elsewhere in this Quarterly Report on Form 10-Q, on January 21, 2018, we entered into an Agreement and Plan of Merger, or the Merger Agreement, with BioCryst Pharmaceuticals, Inc., a Delaware corporation, or BioCryst, Nautilus Holdco, Inc., a Delaware corporation and a direct, wholly owned subsidiary of BioCryst, or Holdco, Island Merger Sub, Inc., a Delaware corporation and a direct, wholly owned subsidiary of Holdco, or Merger Sub A, and Boat Merger Sub, Inc., a Delaware corporation and a direct, wholly owned subsidiary of Holdco, or Merger Sub B. Pursuant to the Merger Agreement, and subject to the satisfaction or waiver of the conditions specified therein, (a) Merger Sub A will be merged with and into us, or the Idera Merger, with us surviving as a wholly owned subsidiary of Holdco, and (b) Merger Sub B will be merged with and into BioCryst, or the BioCryst Merger, which we refer to together with the Idera Merger as the Mergers, with BioCryst surviving as a wholly owned subsidiary of Holdco. Upon completion of the Mergers, Holdco will operate as a combined company under the name Valenscion Incorporated.

A special meeting of Idera stockholders and a special meeting of BioCryst stockholders to vote on the proposal to adopt the Merger Agreement and the transactions contemplated thereby, including the Mergers, are expected to occur on July 10, 2018. Subject to stockholder approval of both companies, we expect to consummate the Mergers in the third quarter of 2018. However, we have prepared this Quarterly Report on Form 10-Q and the forward-looking statements contained in this Quarterly Report on Form 10-Q as if we were going to remain an independent company. See Part I, Item 1A “Risk Factors—Risks Relating to the Mergers” included in our 2017 Form 10-K for certain risks related to the Mergers and the section “Risk Factors” included in the registration statement filed by Holdco with the SEC on Form S-4 (File No. 333-223255) in connection with the Mergers that includes the joint proxy statement/prospectus of us.

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Research and Development Programs

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 50% 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 there is a scientific rationale to evaluate the combination of intratumoral injection of our TLR9 agonists with checkpoint inhibitors. Specifically, we believe intratumoral 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, intratumoral injection of TLR9 agonists has potentiated the anti-tumor activity of multiple checkpoint inhibitors in multiple tumor models. These data have been presented at several scientific and medical conferences from 2014 through the first quarter of 2018. We believe these data support evaluation of combination regimens including the combination of a TLR9 agonist with one or more checkpoint inhibitors for the treatment of cancer.

ONGOING CANCER CLINICAL RESEARCH PROGRAMS

ILLUMINATE (IMO-2125) Clinical Development

Tilsotolimod (IMO-2125) is a synthetic phosphorothioate oligonucleotide that acts as a direct agonist of TLR9 to stimulate the innate and adaptive immune systems. We are developing tilsotolimod for administration via intratumoral injection, for the treatment of anti-PD1 refractory metastatic melanoma in combination with ipilimumab. We are also investigating the combination of intratumoral tilsotolimod in combination with pembrolizumab for the treatment of anti-PD1 refractory metastatic melanoma and intratumoral tilsotolimod in various solid tumors as monotherapy. We refer to our tilsotolimod development program as the ILLUMINATE development program.

Melanoma is a type of skin cancer that begins in a type of skin cell called melanocytes. Although melanoma is a rare form of skin cancer, it causes the large majority of skin cancer deaths. As is the case in many forms of cancer,

melanoma becomes more difficult to treat once the disease has spread beyond the skin to other parts of the body such as the lymphatic system (metastatic disease). Additionally, despite recent advances in therapy, such as immune checkpoint inhibitors, advanced metastatic melanoma continues to present significant morbidity and mortality.

We are currently developing tilsotolimod 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 over 50% will not have responded to first-line anti-PD1 therapy. We also believe TLR9 agonists may be useful in other solid tumor types that are refractory to anti-PD1 treatment due in part to low mutation load and low dendritic cell infiltration.

Tilsotolimod has received Orphan Drug Designation for the treatment of melanoma Stages IIb to IV and Fast Track designation for the treatment of anti-PD1 refractory metastatic melanoma in combination with ipilimumab therapy from the U.S. Food and Drug Administration, or FDA.

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Phase 1/2 Trial of Tilsotolimod (IMO-2125) in Combination with Ipilimumab or Pembrolizumab in Patients with Anti-PD1 Refractory Metastatic Melanoma

In December 2015, we initiated a Phase 1/2 clinical trial to assess the safety and efficacy of tilsotolimod, administered intratumorally, in combination with ipilimumab, in patients with metastatic melanoma (refractory to treatment with a PD1 inhibitor, also referred to as anti-PD1 refractory), which we refer to as ILLUMINATE-204. We subsequently amended the trial protocol to enable an additional arm to study the combination of tilsotolimod with pembrolizumab, an anti-PD1 antibody marketed as Keytruda® by Merck & Co., in the same patient population. In this clinical trial, tilsotolimod is administered intratumorally into a selected tumor lesion at weeks 1, 2, 3, 5, 8, 11, 17, 23 and 29 (total of 9 doses) together with the standard dosing regimen of ipilimumab or pembrolizumab, administered intravenously. For patients who lack superficially accessible disease for injection, tilsotolimod is administered via injection into deep lesions, such as liver metastases, using interventional radiology guidance.

The trial was initiated at the University of Texas, MD Anderson Cancer Center, or MD Anderson, under the strategic research alliance we entered into with MD Anderson in June 2015, and additional sites have been added through the first quarter of 2018. We anticipate that more sites will be added, to bring the total number of participating sites for the trial to ten. 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 tilsotolimod when administered intratumorally in combination with ipilimumab or pembrolizumab. The primary objective of the Phase 2 portion of the trial, which was recently amended to align with FDA approvable endpoints, is to determine the objective response rate (ORR) to the combinations using immune-related response criteria (irRC) and RECIST v1.1 criteria. The secondary objectives of the Phase 2 portion of the trial include the assessment of treatment response utilizing irRC, determination of median progression free survival (PFS) and median overall survival (OS), and to continue to characterize the safety of the combinations. In the Phase 1 portion of the trial, serial biopsies are being taken of selected injected and non-injected tumor lesions pre- and post-24 hours of the first dose of tilsotolimod, as well as at 8 and 13 weeks, to assess immune changes and response assessments. In the Phase 2 portion of the trial, biopsies are optional.

Phase 1/2 Trial of Tilsotolimod (IMO-2125) in Patients with Anti-PD1 Refractory Metastatic Melanoma: Combination with Ipilimumab Arm

In the Phase 1 portion of the ipilimumab arm of our Phase 1/2 clinical trial of tilsotolimod, escalating doses of tilsotolimod ranging from 4 mg through 32 mg were evaluated. In April 2017, we completed tilsotolimod dose escalation and based on the safety and efficacy data and data from translational immune parameters, selected the 8 mg dose level as the recommended dose level for the Phase 2 expansion phase of the tilsotolimod–ipilimumab combination.

At the 2017 European Society for Medical Oncology Congress in September 2017, we disclosed final results from the 18 patients that were evaluated with the tilsotolimod–ipilimumab combination in the Phase 1 dose escalation portion of the trial. Each of these patients but one had progressed on nivolumab or pembrolizumab prior to enrollment in the trial. As of May 31, 2017, the safety data cutoff date for the presentation, the combination of tilsotolimod and ipilimumab had been well tolerated at all dose levels studied. Also as of the safety data cutoff date, no dose-limiting toxicities had been observed and the maximum tolerated dose had not been reached.

In January 2018, we provided an update on our Phase 1/2 trial evaluating tilsotolimod in combination with ipilimumab at the recommended 8 mg dose level, noting that 21 patients had been dosed. As of November 3, 2017, the data cut-off date for the presentation, of the 10 patients that had been treated at the 8 mg dose of tilsotolimod and who had at least one post-baseline disease assessment, four had a complete response or partial response under RECIST v.1.1 criteria, with the one patient who had a complete response continuing off active treatment for more than one year, and remaining disease free. One of the 10 patients had a response which had not been confirmed as of November 3, 2017, but has subsequently been confirmed. Additionally, two other patients that were treated at the 8 mg dose experienced stable disease for at least 24 weeks, which is considered

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to represent meaningful clinical benefit. Also, as of the response data cutoff date, one patient who was treated at the 4 mg dose had an ongoing partial response and had been off active treatment for more than one year.

In April 2017, we initiated enrollment in the Phase 2 portion of the ipilimumab arm of our Phase 1/2 clinical trial of tilsotolimod with the 8 mg dose of intratumoral tilsotolimod. The Phase 2 portion of the trial utilizes a Simon two-stage design to evaluate the objective response rate of tilsotolimod in combination with ipilimumab, compared to historical data for ipilimumab alone in the anti-PD1 refractory metastatic melanoma population. With the responses noted above, the trial has met the pre-specified futility assessment and advanced into the second stage of the Phase 2 portion. We anticipate that the Phase 2 portion of the trial will include a total of up to 60 patients dosed at the 8 mg dose, including some patients from the Phase 1 dose escalation portion who meet the efficacy criteria for the Phase 2 population, and that these patients may be fully accrued by the end of 2018.

Phase 1/2 Trial of Tilsotolimod (IMO-2125) in Patients with Anti-PD1 Refractory Metastatic Melanoma: Combination with Pembrolizumab Arm

In the Phase 1 portion of the pembrolizumab arm of our Phase 1/2 clinical trial of tilsotolimod, we are evaluating escalating doses of tilsotolimod ranging from 8 mg through 32 mg.

We have completed enrollment of a total of six patients in the 8 mg and 16 mg dosing cohorts in the Phase 1 dose escalation portion of the pembrolizumab arm of the trial and are continuing to enroll patients in the 32 mg dosing cohort. One patient who was treated at the 16 mg dose and had previously experienced an ongoing partial response by RECIST v1.1 criteria now has been confirmed to have a complete response.

Phase 3 Trial of Tilsotolimod (IMO-2125) in Combination with Ipilimumab in Patients with Anti-PD1 Refractory Metastatic Melanoma

In the first quarter of 2018, we initiated a Phase 3 trial of the tilsotolimod–ipilimumab combination in patients with anti-PD1 refractory metastatic melanoma, which we refer to as ILLUMINATE-301. We expect that this trial will compare the results of the tilsotolimod–ipilimumab combination to those of ipilimumab alone in a 1:1 randomization, will have a sample size of approximately 300 patients and will be conducted at approximately 80 sites worldwide, which are selected to not overlap with the trial sites for ILLUMINATE-204. The primary endpoints of the trial are

overall response rate (ORR) by RECIST v1.1 and median overall survival (OS). Key secondary endpoints include ORR by irRECIST, durable response rate (DRR), median time to response, median progression free survival (PFS) and patient reported outcomes (PRO) using a validated scale.

We have held discussions with and plan to continue to engage with regulatory authorities regarding the paths to registration for tilsotolimod in combination with ipilimumab in anti-PD1 refractory metastatic melanoma patients, including potentially through an accelerated approval process based on an interim analysis of the Phase 3 trial with the final analysis providing the confirmatory data for full approval.

Phase 1b Trial of Intratumoral Tilsotolimod (IMO-2125) Monotherapy in Patients with Refractory Solid Tumors

In March 2017, we initiated a Phase 1b dose escalation trial of tilsotolimod administered intratumorally as a monotherapy in multiple tumor types, which we refer to as ILLUMINATE-101. In this trial, tilsotolimod is administered intratumorally on days 1, 8 and 15 of cycle 1 and on day 1 of each subsequent 21-day cycle, up to 17 cycles (19 total doses). We anticipate enrolling dose-escalation cohorts of approximately 8 patients at doses of

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8mg (cohort 1), 16mg (cohort 2), 23mg (cohort 3) and 32mg (cohort 4). We expect that a fifth cohort will be enrolled based on the recommended Phase 2 dose. After the last patient in each cohort reaches day 21 of the 21-day dose-limiting toxicity period, the Cohort Review Committee will review safety and provide a recommendation regarding dose escalation to the next dose.

We have completed enrollment in the first and second cohorts, and are enrolling in the third cohort. Additionally, we are enrolling in the melanoma expansion cohort to assess the clinical activity of single agent intratumoral tilsotolimod (8mg dose) in patients with metastatic melanoma which has progressed on or after treatment with a PD-(L)1 inhibitor. We anticipate that this cohort will enroll up to 22 subjects. The melanoma expansion cohort will use a Simon's optimal two-stage design to test for clinically and statistically relevant clinical activity. The melanoma expansion cohort will stop if an interim futility analysis shows there is insufficient evidence of a clinically relevant response rate after 8 subjects (Stage 1).

CLINICAL RESEARCH SUPPORT AGREEMENT

In April 2018, we entered into a clinical development support agreement with Pillar Partners Foundation, or Pillar Partners. Under the terms of the agreement, Pillar Partners has agreed to provide direct funding to support three investigator initiated clinical trials to further strategically expand the clinical research of tilsotolimod (IMO-2125) into broader melanoma populations and other solid tumors. For these trials, we have agreed to provide tilsotolimod. We believe these trials will allow us to expand our knowledge and understanding of the various cancer types and combinations in which tilsotolimod could play a significant role in improving outcomes of patients.

A rare disease is defined by the Orphan Drug Act of 1983 as a disorder or condition that affects less than 200,000 persons in the United States. However, most rare diseases affect far fewer persons. There are numerous rare and ultra-rare diseases that currently have no approved drug therapy and for which no therapies are currently in development. Patients suffering from these diseases often have a high unmet medical need with significant morbidity and/or mortality.

ONGOING RARE DISEASE RESEARCH PROGRAMS

IMO-8400 in Rare Diseases

We have initiated clinical development of IMO-8400 for the treatment of rare diseases and have selected dermatomyositis as our lead clinical target 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 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

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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.

PIONEER

Phase 2 Trial of IMO-8400 in Patients with Dermatomyositis

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 included evidence of active skin involvement. Patients enrolled in the trial were 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 being conducted at 21 centers in the United States, the United Kingdom and Hungary. We concluded enrollment in the trial at 30 patients and expect full Phase 2 trial data in June of 2018 consisting of top-line primary and secondary endpoint analysis, complete tables and listings and translational medicine data. 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.

DISCOVERY PROGRAMS

Nucleic Acid Chemistry Research

We are developing our nucleic acid chemistry technology to “turn off” the mRNA associated with disease causing genes. Our focus is on creating candidates targeted to specific genes to treat cancer and rare diseases. Our key considerations in identifying disease indications and gene targets in our nucleic acid chemistry research program include: (i) strong evidence that the disease is caused by a specific protein; (ii) clear criteria to identify a target patient population; (iii) biomarkers for early assessment of clinical proof of concept; (iv) a targeted therapeutic mechanism of action; and (v) unmet medical need to allow for a rapid development path to approval and commercial opportunity.

IDRA-008 Development

In January 2017, we announced that we had selected IDRA-008 as our first nucleic acid chemistry research program candidate that we plan to enter into clinical development and that we were planning to develop IDRA-008 for a well-established liver target. In January 2018, we announced that IDRA-008 was targeted at Apolipoprotein C-III (APOC-III) and was being developed for the treatment of Familial Chylomicronemia Syndrome (FCS) and Familial Partial Lipodystrophy (FPL) which had available pre-clinical animal models and well-known clinical endpoints. During the first quarter of 2018, we completed our pre-clinical analysis for IDRA-008 and based upon the outcome of pre-clinical pharmacology studies, including a comparative pharmacology study with the competitive development asset Volanesorsen, and IND-enabling safety evaluation, we made a data-driven decision to not advance IDRA-008 into clinical development. We are currently conducting analysis throughout our research portfolio to identify other candidates for future clinical development based on our nucleic acid technology expertise and potential strategic commercial opportunity.

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Nucleic Acid Chemistry Compound—Undisclosed Renal Target

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 nucleic acid chemistry 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 target designated by GSK in connection with entering into the GSK Agreement. From the population of identified development candidates, GSK may designate one development candidate in its sole discretion to move forward into clinical development. We expect GSK to select a development candidate in the second half of 2018. Once GSK designates a development candidate, GSK would be solely responsible for the development and commercialization activities for that designated development candidate.

OTHER 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.

Collaborative Alliances

In addition to our current 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 nucleic acid chemistry research program. Our current alliances include collaborations with Vivelix, GSK, and Abbott Molecular as further described in Note 9 of the notes to our condensed financial statements in this Quarterly Report on Form 10-Q and in our Annual Report on Form 10-K for the year ended December 31, 2017.

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Critical Accounting Policies and Estimates

This management's discussion and analysis of financial condition and results of operations is based on our condensed 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, liabilities, revenues and expenses, and the disclosure of contingent assets and liabilities. On an ongoing basis, management evaluates its estimates and judgments, which are affected by the application of our accounting policies. Management bases its estimates and judgments on historical experience and on various other factors that are believed to be appropriate under the circumstances. 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:

(i) 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

(ii) 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 included in our 2017 Form 10-K. However, please refer to Note 3 in the accompanying notes to the condensed financial statements contained in this Quarterly Report on Form 10-Q for updated policies and estimates, if applicable, that could impact our results of operations, financial position, and cash flows. 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 2017 Form 10-K, fit the description of critical accounting estimates and judgments.

New Accounting Pronouncements

New accounting pronouncements are discussed in Note 3 in the notes to the condensed financial statements in this Quarterly Report on Form 10-Q.

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Financial Condition, Liquidity and Capital Resources

Financial Condition

We have incurred operating losses in all fiscal years since our inception except 2002, 2008 and 2009. As of March 31, 2018, we had an accumulated deficit of $624.6 million. To date, substantially all of our revenues have been from collaboration and license agreements and we have received no revenues from the sale of commercial products. We have devoted substantially all of our efforts to research and development, including clinical trials, and we have not completed development of any commercial products. Our research and development activities, together with our selling, general and administrative expenses, are expected to continue to result in substantial operating losses for the foreseeable future. These losses, among other things, have had and will continue to have an adverse effect on our stockholders' equity, total assets and working capital. Because of the numerous risks and uncertainties associated with developing drug candidates, and if approved, commercial products, we are unable to predict the extent of any future losses, whether or when any of our drug candidates will become commercially available or when we will become profitable, if at all.

Liquidity and Capital Resources

Overview

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

(i) sale of common stock, preferred stock and warrants;
(ii) exercise of warrants;
(iii) debt financing, including capital leases;
(iv) license fees, research funding and milestone payments under collaborative and license agreements; and
(v) interest income.

We filed a shelf registration statement on Form S-3 on August 10, 2017, which was declared effective on September 8, 2017. Under this registration statement, we may sell, in one or more transactions, up to $250.0 million of common stock, preferred stock, depository shares and warrants. As of April 30, 2018, we may sell up to an additional $192.5 million of securities under this registration statement.

Funding Requirements

We had cash, cash equivalents and investments of approximately $107.5 million at March 31, 2018. We believe that, based on our current operating plan, our existing cash and cash equivalents will enable us to fund our operations into the third quarter of 2019. Specifically, we believe that our available funds will be sufficient to enable us to:

(i) complete the dose-finding portion of our ongoing Phase 1/2 clinical trial of tilsotolimod in combination with pembrolizumab in anti-PD1 refractory metastatic melanoma and complete enrollment in the Phase 2 portion of this trial in combination with ipilimumab;
(ii) continue to enroll patients in our Phase 3 clinical trial of tilsotolimod in combination with ipilimumab for the treatment of anti-PD1 refractory metastatic melanoma;
(iii) continue to enroll patients in our Phase 1b intratumoral monotherapy clinical trial of tilsotolimod in multiple refractory tumor types; and
(iv) complete our ongoing Phase 2 clinical trial of IMO-8400 in patients with dermatomyositis.

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We expect that we will need to raise additional funds in order to complete our ongoing clinical trials of tilsotolimod, conduct any other clinical development of our TLR drug candidates or to conduct any other development of our nucleic acid chemistry 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:

(i) the results of our clinical and preclinical development activities in our rare disease program, our immuno-oncology program and our nucleic acid chemistry research program, and our ability to advance our drug candidates and nucleic acid chemistry technology on the timelines anticipated;
(ii) the cost, timing, and outcome of regulatory reviews;
(iii) 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;
(iv) the receptivity of the capital markets to financings by biotechnology companies generally and companies with drug candidates and technologies such as ours specifically; and
(v) 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 12 of the notes to our financial statements included in our 2017 Form 10-K, 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.

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Cash Flows

The following table presents a summary of the primary sources and uses of cash for the three months ended March 31, 2018 and 2017:

	Three months ended March 31,	
(in thousands)	2018	2017
Net cash provided by (used in):		
Operating activities	$ (14,747)	$ (17,646)
Investing activities	(14)	16,690
Financing activities	9,591	(17)
Decrease in cash, cash equivalents and restricted cash	$ (5,170)	$ (973)

Operating Activities. The use of cash in both periods resulted primarily from our net losses adjusted for non-cash charges and changes in components of working capital. The decrease in cash used in operating activities for the three months ended March 31, 2018, as compared to the 2017 period, was primarily due to decreases in cash outflows related to our discovery and development programs, including payments to contract research organizations.

Investing Activities. Net cash (used in) provided by investing activities primarily consisted of the following amounts relating to our investments in available-for-sale securities and purchases of property and equipment:

- for the three months ended March 31, 2018, purchases of less than $0.1 million of property and equipment; and
- for the three months ended March 31, 2017, proceeds from the maturity of $16.7 million of available-for-sale securities, partially offset by the purchase of less than $0.1 million of property and equipment.

Financing Activities. Net cash provided by (used in) financing activities primarily consisted of the following amounts received in connection with the issuances of common stock and payments on our note under our loan and security agreement with Oxford Finance LLC, or our note payable:

- for the three months ended March 31, 2018, $9.7 million in aggregate proceeds from the exercise of common stock warrants and employee stock purchases under our 2017 Employee Stock Purchase Plan, partially offset by $0.1 million in payments made on our note payable; and
- for the three months ended March 31, 2017, approximately $0.1 million of payments made on our note payable, partially offset by proceeds of less than $0.1 million from employee stock purchases under our 1995 Employee

Stock Purchase Plan.

Contractual Obligations

During the three months ended March 31, 2018, 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, 2017.

Off-Balance Sheet Arrangements

As of March 31, 2018, we had no off-balance sheet arrangements.

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Results of Operations

Three Months Ended March 31, 2018 and 2017

Alliance Revenue

Alliance revenue for the three months ended March 31, 2018 and 2017 was comprised of the following:

($ in thousands)	Three months ended March 31, 2018	2017	% Change	
GSK collaboration	$ 142	$ 371	(62%)	(1)
Vivelix collaboration	56	—	100%	(2)
Other	57	7	714%	(3)
Total Alliance revenue	$ 255	$ 378	(33%)	

(1) GSK collaboration revenues for the three months ended March 31, 2018 and 2017 primarily relate to the recognition of a $2.5 million upfront payment received in connection with the execution of the GSK Agreement in November 2015, which was initially recorded as deferred revenue. We are recognizing this deferred revenue as revenue on a straight line basis over the anticipated performance period under the GSK Agreement. The decrease in GSK collaboration revenues during the three months ended March 31, 2018 as compared to the 2017 period is due primarily to $0.1 million included in the amount recognized in the 2017 period for additional services provided for under the GSK Agreement. The remaining decrease is attributable to a change that we made during the second quarter of 2017 with respect to our anticipated performance period under our collaboration with GSK from the original estimate of 27 months to an updated estimate of 36 months, which we accounted for on a prospective basis. See Note 9 to the condensed financial statements appearing elsewhere in this Quarterly Report on Form 10-Q for additional information on our collaboration with GSK and the related accounting treatment.

(2) Vivelix collaboration revenues for the three months ended March 31, 2018 relate to additional research services provided for under the Vivelix Agreement. No such services were performed in the 2017 period. See Note 9 to the condensed financial statements appearing elsewhere in this Quarterly Report on Form 10-Q for additional information on our collaboration with Vivelix and the related accounting treatment.

(3) Other revenues are comprised of amounts earned in connection with collaborations which are not material to our current operations nor expected to be material in the future, including reimbursements by licensees of costs

associated with patent maintenance.

Research and Development Expenses

For each of our research and development programs, we incur both direct and indirect expenses. We track direct research and development expenses by program, which include third party costs such as contract research, consulting and clinical trial and manufacturing costs. We do not allocate indirect research and development expenses, which may include regulatory, laboratory (equipment and supplies), personnel, facility and other overhead costs (including depreciation and amortization), to specific programs.

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In the table below, research and development expenses are set forth in the following categories which are discussed beneath the table:

	Three months ended March 31,		%	
($ in thousands)	2018	2017	Change	
IMO-2125 external development expense	$ 6,518	$ 2,395	172%	(1)
IMO-8400 external development expense	1,216	2,429	(50%)	(2)
IMO-9200 external development expense	—	4	(100%)	
Other drug development expense	3,755	4,066	(8%)	(3)
Basic discovery expense	2,067	2,591	(20%)	(4)
Total research and development expenses	$ 13,556	$ 11,485	18%	

(1) IMO-2125 External Development Expenses. These expenses include external expenses that we have incurred in connection with the development of tilsotolimod (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, 2018 we incurred approximately $22.8 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 to assess the safety and efficacy of tilsotolimod (IMO-2125) in combination with ipilimumab and with pembrolizumab in patients with metastatic melanoma (ILLUMINATE-204), the preparation and conduct of our ongoing Phase 1b clinical trial of tilsotolimod (IMO-2125) monotherapy in patients with refractory solid tumors (ILLUMINATE-101), the preparation for and initiation of our ongoing Phase 3 clinical trial of tilsotolimod (IMO-2125) in combination with ipilimumab in patients with metastatic melanoma (ILLUMINATE-301), and the manufacture of additional drug substance for use in our clinical trials and additional nonclinical studies.

The increase in our IMO-2125 external development expenses during the three months ended March 31, 2018, as compared to the 2017 period, was primarily due to increases in drug manufacturing costs to support our ongoing ILLUMINATE-204 trial and our ongoing ILLUMINATE-301 trial, which was initiated in the first quarter of 2018, as well as increases in costs incurred with contract research organizations associated with the initiation of ILLUMINATE-301.

(2) 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 $44.0 million in IMO-8400 external development expenses through March 31, 2018, including costs associated with our Phase 1 clinical trial in healthy subjects; our Phase 2 clinical trial in patients with psoriasis, our Phase 1/2 clinical trial in patients with

Waldenström's macroglobulinemia and our Phase 1/2 clinical trial in patients with diffuse large B-cell lymphoma, or 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 DLBCL harboring the MYD88 L265P oncogenic mutation.

The decrease in our IMO-8400 external development expenses during the three months ended March 31, 2018, as compared to the 2017 period, was primarily due to costs incurred during the 2017 period on clinical development of IMO-8400 for B-cell lymphomas, including our trials in Waldenström's macroglobulinemia and DLBCL harboring the MYD88 L265P oncogenic mutation, which we did not incur in 2018 as a result of the Company's decision to discontinue development of IMO-8400 for treatment of B-cell lymphomas and focus on the development of IMO-8400 for the treatment of dermatomyositis.

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(3) 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, including IDRA-008. 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 decrease in other drug development expenses during the three months ended March 31, 2018, as compared to the 2017 period, was primarily due to a decrease in external costs of preclinical programs, including related toxicology studies and awareness and education programs, as we focused on the development of our clinical drug candidates.

(4) 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 nucleic acid chemistry research programs. These expenses reflect charges for laboratory supplies, external research, and professional fees, as well as payroll and overhead expenses.

The decrease in basic discovery expenses during the three months ended March 31, 2018, as compared to the 2017 period, was primarily due to lower compensation related expenses, including salaries and non-cash stock-based compensation resulting from the resignation of our President of Research in May 2017, and decreases in expenses for laboratory supplies related to internal discovery programs as we focused on the development of our clinical drug candidates.

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 trials of tilsotolimod (IMO-2125), our ongoing clinical trial of IMO-8400, and our ongoing development of compounds in our nucleic acid chemistry research 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. For the three months ended

March 31, 2018 and 2017, general and administrative expenses totaled $7.0 million and $4.1 million, respectively.

The increase in general and administrative expenses during the three months ended March 31, 2018, as compared to the 2017 period, was primarily due to increases in legal and professional fees related to our proposed merger transaction. See Note 2 to the condensed financial statements appearing elsewhere in this Quarterly Report on Form 10-Q for additional information on the proposed merger transaction.

Interest Income

Interest income for each of the three months ended March 31, 2018 and 2017 totaled approximately $0.2 million. Amounts may fluctuate from period to period due to changes in average investment balances, including money market funds classified as cash equivalents, and composition of investments.

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Interest Expense

Interest expense for each of the three months ended March 31, 2018 and 2017 totaled less than $0.1 million and related to interest incurred on the outstanding principal balance of our note payable.

Net Loss Applicable to Common Stockholders

As a result of the factors discussed above, our net loss applicable to common stockholders was $20.1 million and $15.1 million for the three months ended March 31, 2018 and 2017, respectively.

Item 3. Quantitative and Qualitative Disclosures about Market Risk.

As of March 31, 2018, all of our 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, 2018, all of our invested funds were invested in a money market fund, classified in cash and cash equivalents on the accompanying balance sheet, and a certificate of deposit, classified in restricted cash and other assets on the accompanying balance sheet.

Based on a hypothetical 10% 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, 2018. 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, 2018, 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. There were no changes in our internal control over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act) that occurred during the fiscal quarter ended March 31, 2018 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

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PART II — OTHER INFORMATION

Item 1. Legal Proceedings.

Three putative class action complaints have been filed in connection with the Agreement and Plan of Merger announced on January 22, 2018. On March 6, 2018 plaintiff Melvin Klein filed a lawsuit captioned Klein v. BioCryst Pharmaceuticals, Inc., et al., No. 1:18-cv-00358, against BioCryst, along with the BioCryst board, Idera, Holdco, Merger Sub A and Merger Sub B in United States District Court for the District of Delaware. On March 14, 2018, plaintiff Lisa Raatz filed a lawsuit captioned Raatz v. Idera Pharmaceuticals, Inc., et al., No. 1:18-cv-10485, against Idera, along with the members of the Idera board, BioCryst, Holdco, Merger Sub A and Merger Sub B in United States District Court for the District of Massachusetts. On March 22, 2018 plaintiff Ricky Cohen filed a lawsuit captioned Cohen v. Idera Pharmaceuticals, Inc., et al., No. 1:18-cv-00428, against Idera, along with the members of the Idera board. All three lawsuits allege violations of Sections 14(a) and 20(a) of the Securities Exchange Act of 1934, and SEC Rule 14a-9, for alleged material misstatements or omissions in connection with the Mergers. The complaints include demands for, among other things, an injunction preventing defendants from closing the proposed merger transaction absent certain disclosures of information identified in the complaints. Idera believes these complaints are without merit and intends to vigorously defend itself.

Item 1A. Risk Factors.

Investing in our securities involves a high degree of risk. In addition to the other information contained elsewhere in this report, you should carefully consider the factors discussed in “Part I, Item 1A. Risk Factors” in our most recent Annual Report on Form 10-K for the year ended December 31, 2017, which could be materially and adversely affect our business, financial condition or future results.

Item 5. Other Information.

Our board of directors has set June 20, 2018 as the date for our 2018 Annual Meeting of Stockholders.

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Item 6.Exhibits.

Exhibit No.	Description
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

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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 9, 2018 /s/ Vincent J. Milano
Vincent J. Milano
President and Chief Executive Officer
(Principal Executive Officer)

Date: May 9, 2018 /s/ Louis J. Arcudi, III
Louis J. Arcudi, III
Chief Financial Officer
(Principal Financial and Accounting Officer)