

IDERA PHARMACEUTICALS, INC.

Form DEF 14A

April 30, 2014

[Table of Contents](#)

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

SCHEDULE 14A

(RULE 14a-101)

INFORMATION REQUIRED IN PROXY STATEMENT

SCHEDULE 14A INFORMATION

Proxy Statement Pursuant to Section 14(a) of the

Securities Exchange Act of 1934

(Amendment No.)

Filed by the Registrant

Filed by a Party other than the Registrant

Check the appropriate box:

Preliminary Proxy Statement

Confidential, for Use of the Commission Only (as permitted by Rule 14a-6(e)(2))

Definitive Proxy Statement

Definitive Additional Materials

Soliciting Material Pursuant to § 240.14a-12

IDERA PHARMACEUTICALS, INC.

(Name of Registrant as Specified in its Charter)

(Name of Person(s) Filing Proxy Statement, if Other than the Registrant)

Payment of Filing Fee (Check the appropriate box):

No fee required.

Fee computed on table below per Exchange Act Rules 14a-6(i)(1) and 0-11.

1) Title of each class of securities to which transaction applies:

2) Aggregate number of securities to which transaction applies:

3) Per unit price or other underlying value of transaction computed pursuant to Exchange Act Rule 0-11 (set forth the amount on which the filing fee is calculated and state how it was determined):

4) Proposed maximum aggregate value of transaction:

5) Total fee paid:

Fee paid previously with preliminary materials.

Check box if any part of the fee is offset as provided by Exchange Act Rule 0-11(a)(2) and identify the filing for which the offsetting fee was paid previously. Identify the previous filing by registration statement number, or the Form or Schedule and the date of its filing.

1) Amount Previously Paid:

2) Form, Schedule or Registration Statement No.:

3) Filing Party:

4) Date Filed:

Table of Contents

IDERA PHARMACEUTICALS, INC.

167 Sidney Street

Cambridge, Massachusetts 02139

NOTICE OF 2014 ANNUAL MEETING OF STOCKHOLDERS

Date and Time: Monday, June 9, 2014 at 10:00 a.m., local time

Place: Idera Pharmaceuticals, Inc.
167 Sidney Street
Cambridge, Massachusetts 02139

Items of Business: At our 2014 annual meeting of stockholders we will ask our stockholders to:

Elect two Class I directors to our board of directors for terms to expire at the 2017 annual meeting of stockholders;

Approve, by non-binding vote, executive compensation;

Approve an amendment to our 2013 Stock Incentive Plan to increase the number of shares authorized for issuance thereunder from an aggregate of 4,224,460 shares of common stock *plus* such additional number of shares of common stock (up to 5,720,540 shares) as is equal to the number of shares of common stock subject to awards granted under our 2008 Stock Incentive Plan which awards expire, terminate or are otherwise surrendered, cancelled, forfeited or repurchased by us at their original issuance price pursuant to a contractual repurchase right, to an aggregate of up to 10,224,460 shares of common stock *plus* such additional number of shares of common stock (up to 5,720,540 shares) as is equal to the number of shares of common stock subject to awards granted under the 2008 Stock Incentive Plan which awards expire, terminate or are otherwise surrendered, cancelled, forfeited or repurchased by us at their original issuance price pursuant to a contractual repurchase right;

Ratify the selection of Ernst & Young LLP as our independent registered public accounting firm for the fiscal year ending December 31, 2014; and

Transact any other business as may properly come before the 2014 annual meeting or any postponement or adjournment of the 2014 annual meeting.

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The board of directors has no knowledge of any other business to be transacted at the 2014 annual meeting.

Record Date:

You may vote at the 2014 annual meeting if you were a stockholder of record at the close of business on April 25, 2014.

Proxy Voting:

It is important that your shares be represented and voted at the annual meeting. Whether or not you plan to attend the 2014 annual meeting, please mark, sign, date and promptly mail your proxy card in the enclosed postage-paid envelope or follow the instructions on the proxy card to vote by telephone or over the internet. You may revoke your proxy at any time before its exercise at the 2014 annual meeting.

By order of the board of directors,

Louis J. Arcudi, III
Secretary
Cambridge, Massachusetts
April 30, 2014

Table of Contents

TABLE OF CONTENTS

| | |
|--|----|
| <u>PROXY STATEMENT</u> | 1 |
| <u>INFORMATION ABOUT THE 2014 ANNUAL MEETING</u> | 2 |
| <u>Who may vote?</u> | 2 |
| <u>How do I vote my shares if I am a stockholder of record?</u> | 2 |
| <u>How do I vote my shares if I hold them in street name?</u> | 2 |
| <u>How may I change or revoke my vote?</u> | 3 |
| <u>What constitutes a quorum?</u> | 3 |
| <u>What vote is required to approve each matter and how will votes be counted?</u> | 4 |
| <u>How does the board of directors recommend that I vote?</u> | 4 |
| <u>Will any other business be conducted at the 2014 annual meeting of stockholders?</u> | 4 |
| <u>Who is making and paying for the solicitation of proxies and how is it made?</u> | 4 |
| <u>How and when may I submit a proposal for the 2015 annual meeting of stockholders?</u> | 5 |
| <u>Are annual meeting materials householded?</u> | 5 |
| <u>PROPOSAL ONE: ELECTION OF DIRECTORS</u> | 6 |
| <u>CORPORATE GOVERNANCE INFORMATION</u> | 12 |
| <u>Board of Directors</u> | 12 |
| <u>Board Leadership Structure</u> | 12 |
| <u>Board's Role in Risk Oversight</u> | 12 |
| <u>Board Committees</u> | 13 |
| <u>Director Independence</u> | 14 |
| <u>Director Nomination Process</u> | 14 |
| <u>Stockholder Nominees</u> | 15 |
| <u>Communicating with our Board of Directors</u> | 15 |
| <u>Compensation Committee Interlocks and Insider Participation</u> | 16 |
| <u>Executive Officers of Idera</u> | 16 |
| <u>SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT</u> | 17 |
| <u>EXECUTIVE COMPENSATION</u> | 22 |
| <u>Compensation Discussion and Analysis</u> | 22 |
| <u>Agreements with our Named Executive Officers</u> | 29 |
| <u>Compensation Committee Report</u> | 31 |
| <u>Summary Compensation Table</u> | 32 |
| <u>Grants of Plan-Based Awards</u> | 33 |
| <u>Outstanding Equity Awards at Fiscal Year-End</u> | 34 |
| <u>Option Exercises and Stock Vested</u> | 35 |
| <u>Potential Payments Upon Termination or Change in Control</u> | 35 |
| <u>EQUITY COMPENSATION PLAN INFORMATION</u> | 38 |
| <u>PROPOSAL TWO: APPROVAL, BY NON-BINDING VOTE, OF EXECUTIVE COMPENSATION</u> | 39 |
| <u>PROPOSAL THREE: AMENDMENT OF 2013 STOCK INCENTIVE PLAN</u> | 41 |
| <u>PROPOSAL FOUR: RATIFICATION OF SELECTION OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM</u> | 53 |
| <u>ACCOUNTING MATTERS</u> | 53 |
| <u>Report of the Audit Committee</u> | 53 |
| <u>Independent Registered Public Accounting Firm Fees</u> | 54 |
| <u>Pre-Approval Policies and Procedures</u> | 54 |
| <u>TRANSACTIONS WITH RELATED PERSONS</u> | 55 |
| <u>Pillar Agreements</u> | 55 |
| <u>Public Offerings</u> | 57 |
| <u>Policies and Procedures for Related Person Transactions</u> | 58 |

SECTION 16(a) BENEFICIAL OWNERSHIP REPORTING COMPLIANCE

Table of Contents

IDERA PHARMACEUTICALS, INC.

167 Sidney Street

Cambridge, Massachusetts 02139

PROXY STATEMENT

For our Annual Meeting of Stockholders to be held on June 9, 2014

Idera Pharmaceuticals, Inc., a Delaware corporation, which is referred to as we, us, the Company or Idera in this proxy statement, is sending you this proxy statement and the enclosed proxy card because our board of directors is soliciting your proxy to vote at our 2014 annual meeting of stockholders, or the 2014 annual meeting. The 2014 annual meeting will be held on Monday, June 9, 2014, at 10:00 a.m., local time, at our principal offices located at 167 Sidney Street, Cambridge, Massachusetts 02139. If the 2014 annual meeting is adjourned for any reason, then proxies submitted may be used at any adjournment of the 2014 annual meeting.

This proxy statement summarizes information about the proposals to be considered at the 2014 annual meeting and other information you may find useful in determining how to vote. The proxy card is the means by which you actually authorize another person to vote your shares in accordance with your instructions.

We are mailing this proxy statement and the enclosed proxy card to stockholders on or about May 8, 2014.

In this mailing, we are also including copies of our annual report to stockholders for the year ended December 31, 2013, or 2013 Annual Report. Our annual report on Form 10-K for the year ended December 31, 2013, as filed with the Securities and Exchange Commission, or the SEC, on March 13, 2014, including our audited financial statements, is included in our 2013 Annual Report and is also available free of charge on our website, www.iderapharma.com, where it can be accessed by clicking Investors and then SEC Filings, or through the SEC's electronic data system at www.sec.gov. **To request a printed copy of our Notice of Annual Meeting, Proxy Statement and 2013 Annual Report, which we will provide to you free of charge, or to obtain directions to be able to attend the 2014 annual meeting and vote in person, write to Investor Relations, Idera Pharmaceuticals, Inc., 167 Sidney Street, Cambridge, Massachusetts 02139, call our toll-free number 1 (877) 888-6550, or email Investor Relations at ir@iderapharma.com.**

Important Notice Regarding the Availability of

Proxy Materials for the 2014 Annual Meeting

to Be Held on June 9, 2014:

The Notice of Annual Meeting, Proxy Statement and 2013 Annual Report are available at <http://ir.iderapharma.com/phoenix.zhtml?c=208904&p=proxy>.

Table of Contents

INFORMATION ABOUT THE 2014 ANNUAL MEETING

Who may vote?

Holders of record of our common stock at the close of business on April 25, 2014, the record date for the 2014 annual meeting, are entitled to vote on each matter properly brought before the 2014 annual meeting. Holders of our common stock will be entitled to one vote for each share of common stock held as of the record date. As of the close of business on April 25, 2014, the record date for the 2014 annual meeting, we had 82,442,460 shares of common stock outstanding. Holders of our Series E convertible preferred stock, or Series E preferred stock, are not entitled to vote at the 2014 annual meeting.

How do I vote my shares if I am a stockholder of record?

If you are a stockholder of record (meaning that you hold shares in your name in the records of our transfer agent, Computershare Trust Company, N.A., and that your shares are not held in street name by a bank or brokerage firm), you may vote your shares in any one of the following ways:

You may vote by mail. To vote by mail, you need to complete, date and sign the proxy card that accompanies this proxy statement and promptly mail it in the enclosed postage-prepaid envelope. You do not need to put a stamp on the enclosed envelope if you mail it from within the United States.

You may vote by telephone. To vote by telephone through services provided by Computershare Trust Company, N.A., call 1-800-652-VOTE (8683), and follow the instructions provided on each proxy card. If you vote by telephone, you do not need to complete and mail your proxy card.

You may vote over the internet. To vote over the internet through services provided by Computershare Trust Company, N.A., please go to the following website: <http://www.investorvote.com/IDRA> and follow the instructions at that site for submitting your proxy card. If you vote over the internet, you do not need to complete and mail your proxy card.

You may vote in person. If you attend the 2014 annual meeting, you may vote by delivering your completed proxy card in person or you may vote by completing a ballot at the 2014 annual meeting. Ballots will be available at the 2014 annual meeting.

Your proxy will only be valid if you complete and return the proxy card, vote by telephone or vote over the internet at or before the 2014 annual meeting. The persons named in the proxy card will vote the shares you own in accordance with your instructions on your proxy card, in your vote by telephone or in your vote over the internet. If you return the proxy card, vote by telephone or vote over the internet, but do not give any instructions on a particular matter described in this proxy statement, the persons named in the proxy card will vote the shares you own in accordance with the recommendations of our board of directors.

How do I vote my shares if I hold them in street name?

If the shares you own are held in street name by a bank or brokerage firm, your bank or brokerage firm, as the record holder of your shares, is required to vote your shares according to your instructions. In order to vote your shares, you will need to follow the directions that your bank or brokerage firm provides to you. Many banks and brokerage firms solicit voting instructions over the internet or by telephone.

Under applicable stock exchange rules, banks or brokerage firms that hold shares in street name for customers have the discretion to vote those shares with respect to certain matters if they have not received instructions from the beneficial owners. Banks or brokerage firms will have this discretionary authority with respect to routine or discretionary matters. Among the proposals to be presented at the 2014 annual meeting, the ratification of the selection of our independent registered public accounting firm is a discretionary matter, and

Table of Contents

banks and brokerage firms are permitted to vote your shares if you have not given voting instructions. The election of directors, the approval of a non-binding vote on executive compensation and the approval of an amendment to our 2013 Stock Incentive Plan are non-routine or non-discretionary matters, and banks and brokerage firms cannot vote your shares on such proposals if you have not given voting instructions.

Broker non-votes occur when a bank or brokerage firm submits a proxy for shares but does not indicate a vote for a particular proposal because the bank or brokerage firm either does not have authority to vote on that proposal and has not received voting instructions from the beneficial owner or has discretionary authority but chooses not to exercise it. The effect of broker non-votes is discussed below in the answer to the question What vote is required to approve each matter and how will votes be counted? .

Regardless of whether your shares are held in street name, you are welcome to attend the 2014 annual meeting. If your shares are held in street name, you may not vote your shares in person at the 2014 annual meeting unless you obtain a proxy, executed in your favor, from the holder of record (i.e., your bank or brokerage firm). If you hold your shares in street name and wish to vote in person, please contact your bank or brokerage firm before the 2014 annual meeting to obtain the necessary proxy from the holder of record.

How may I change or revoke my vote?

If you are a stockholder of record, even if you complete and return a proxy card or vote by telephone or over the internet, you may change or revoke your vote at any time before your proxy is exercised by taking one of the following actions:

send written notice to our Secretary, Louis J. Arcudi, III, at our address above, stating that you wish to revoke your vote;

deliver to us another signed proxy card with a later date or vote by telephone or over the internet at a later date; or

attend the 2014 annual meeting, notify our Secretary that you are present and then vote by ballot.

If you own shares in street name, your bank or brokerage firm should provide you with instructions for changing or revoking your vote.

What constitutes a quorum?

In order for business to be conducted at the 2014 annual meeting, a quorum must be present. A quorum consists of the holders of a majority of the shares of our common stock issued, outstanding and entitled to vote at the 2014 annual meeting.

Shares of voting stock present in person or represented by proxy (including broker non-votes and shares that are abstained or withheld or with respect to which no voting instructions are provided for one or more of the matters to be voted upon) will be counted for the purpose of determining whether a quorum exists.

If a quorum is not present, the 2014 annual meeting will be adjourned until a quorum is obtained.

Table of Contents**What vote is required to approve each matter and how will votes be counted?**

The table below sets forth the vote required for each matter being submitted to our stockholders at the 2014 annual meeting to be approved and the effect that abstentions, withheld votes and broker non-votes will have on the outcome of voting on each proposal that is being submitted to our stockholders for approval at the 2014 annual meeting.

| Proposal | Affirmative Vote Required | Abstentions/ Withholds | Broker Non- Votes |
|---|--|-----------------------------------|------------------------------|
| Election of Directors <i>(Proposal 1)</i> | Plurality of votes cast by holders of common stock entitled to vote | No effect(1) | No effect |
| Advisory Vote on Executive Compensation <i>(Proposal 2)</i> | Majority of common stock present or represented and voting on the matter | No effect | No effect |
| Amendment of 2013 Stock Incentive Plan <i>(Proposal 3)</i> | Majority of common stock present or represented and voting on the matter | No effect | No effect |
| Ratification of Selection of Ernst & Young LLP <i>(Proposal 4)</i> | Majority of common stock present or represented and voting on the matter | No effect | No effect |

(1) You may vote FOR all of the director nominees, WITHHOLD your vote from all of the director nominees or WITHHOLD your vote from any of the director nominees.

Each share of common stock will be counted as one vote.

How does the board of directors recommend that I vote?

Our board of directors recommends that you vote as follows:

To elect the two nominees to our board of directors (Proposal One); and

FOR Proposal Two, Proposal Three and Proposal Four.

Under the Securities Exchange Act of 1934, as amended, or the Exchange Act, and related SEC regulations, the vote on executive compensation, as described in greater detail in Proposal Two set forth elsewhere in this proxy statement, is an advisory vote, meaning it is non-binding. The vote on the ratification of the selection of Ernst & Young LLP as our independent registered public accounting firm, as described in greater detail in Proposal Four, is also advisory. Our board will carefully consider the outcome of each of these votes.

Will any other business be conducted at the 2014 annual meeting of stockholders?

Our board of directors does not know of any other business to be conducted or matters to be voted upon at the 2014 annual meeting. If any other matter properly comes before the 2014 annual meeting, the persons named in the proxy card that accompanies this proxy statement will exercise their judgment in deciding how to vote or otherwise act with respect to that matter at the 2014 annual meeting.

Who is making and paying for the solicitation of proxies and how is it made?

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We are making the solicitation and will bear the costs of soliciting proxies. In addition to solicitations by mail, our directors, officers and employees, without additional remuneration, may solicit proxies by telephone, facsimile, email, personal interviews and other means. We may retain a proxy solicitation firm to assist in the

- 4 -

Table of Contents

solicitation of proxies in connection with the 2014 annual meeting. In that event, we will pay such firm customary fees, which we expect would be approximately \$10,000, plus expenses. We have requested that brokerage houses, custodians, nominees and fiduciaries forward copies of the proxy materials to the persons for whom they hold shares and request instructions for voting the proxies. We will reimburse the brokerage houses and other persons for their reasonable out-of-pocket expenses in connection with this distribution.

How and when may I submit a proposal for the 2015 annual meeting of stockholders?

If you are interested in submitting a proposal for inclusion in the proxy statement and proxy card for our 2015 annual meeting of stockholders, or the 2015 annual meeting, you need to follow the procedures outlined in Rule 14a-8 of the Exchange Act. We must receive your proposal intended for inclusion in the proxy statement at our principal executive offices, 167 Sidney Street, Cambridge, Massachusetts 02139, Attention: Secretary, no later than December 31, 2014. SEC rules set standards for the types of stockholder proposals and the information that must be provided by the stockholder making the request.

If you wish to present a proposal at the 2015 annual meeting, but do not wish to have the proposal considered for inclusion in the proxy statement and proxy card or have not complied with the requirements for inclusion of such proposal in our proxy statement under SEC rules, you must also give written notice to us at the address noted above. Our bylaws specify the information that must be included in any such notice, including a brief description of the business to be brought before the annual meeting, the name of the stockholder proposing such business and stock ownership information for such stockholder. In accordance with our bylaws, we must receive this notice at least 60 days, but not more than 90 days, prior to the date of the 2015 annual meeting and the notice must include specified information regarding the proposal and the stockholder making the proposal.

Notwithstanding the foregoing, if we provide less than 70 days' notice or prior public disclosure of the date of the annual meeting to the stockholders, notice by the stockholders must be received by our Secretary no later than the close of business on the tenth day following the date on which the notice of the annual meeting was mailed or such public disclosure was made, whichever occurs first. If a stockholder who wished to present a proposal fails to notify us by this date, the proxies that management solicits for that meeting will have discretionary authority to vote on the stockholder's proposal if it is otherwise properly brought before that meeting. If a stockholder makes timely notification, the proxies may still exercise discretionary authority to vote on stockholder proposals under circumstances consistent with the SEC's rules.

Are annual meeting materials householded?

Some banks and brokerage firms may be participating in the practice of "householding" proxy statements and annual reports. This means that the banks and brokerage firms send only one copy of this proxy statement and the accompanying annual report to multiple stockholders in the same household. Upon request, we will promptly deliver separate copies of this proxy statement and our annual report to stockholders. To make such a request, please call (617) 679-5500 or write to Investor Relations, 167 Sidney Street, Cambridge, Massachusetts 02139 or email Investor Relations at ir@iderapharma.com. To receive separate copies of our annual report to stockholders and proxy statement in the future, or to receive only one copy for the household, please contact your bank or brokerage firm, or contact us at the above address and phone number.

Table of Contents

PROPOSAL ONE

ELECTION OF DIRECTORS

General Information

Our board of directors is divided into three classes and currently consists of four Class I directors: C. Keith Hartley, Kelvin M. Neu, M.D., William S. Reardon, C.P.A. and Abdul-Wahab Umari; four Class II directors: Julian C. Baker, James A. Geraghty, Robert W. Karr, M.D. and Malcolm MacCoss, Ph.D.; and four Class III directors: Sudhir Agrawal, D. Phil., Youssef El Zein, Mark Goldberg, M.D. and Eve E. Slater, M.D. Each member of a class is elected for a three-year term, with the terms staggered so that approximately one-third of our directors stand for election at each annual meeting of stockholders. The Class I, Class II and Class III directors were elected to serve until the annual meeting of stockholders to be held in 2014, 2015 and 2016, respectively, and until their respective successors are elected and qualified.

Our board of directors, on the recommendation of our nominating and corporate governance committee, has nominated Dr. Neu and Mr. Reardon for election as Class I directors at the 2014 annual meeting. At the 2014 annual meeting, stockholders will be asked to consider the election of Dr. Neu, who has been nominated for election as a director at a meeting of our stockholders for the first time. In March 2014, Dr. Neu was elected to our board of directors as a Class I director with a term expiring at our 2014 annual meeting. Dr. Neu was recommended for initial election to our board of directors by our nominating and corporate governance committee. Mr. Hartley and Mr. Umari have not been nominated and will not be standing for re-election to our board of directors at the 2014 annual meeting.

The persons named in the enclosed proxy card will vote to elect Dr. Neu and Mr. Reardon to our board of directors unless you indicate that you withhold authority to vote for the election of any or all nominees. You may not vote for more than two directors. Each Class I director will be elected to hold office until our 2017 annual meeting of stockholders and until his successor is elected and qualified or until his earlier resignation, death or removal. Each of the nominees is presently a director and each has indicated a willingness to serve as a director, if elected. If a nominee becomes unable or unwilling to serve, however, the persons acting under the proxy may vote for substitute nominees selected by the board of directors.

Information about our Directors

Set forth below are the names of each of the nominees for election to our board of directors, the names of each of our other continuing directors, the years in which each first became a director, their ages as of March 14, 2014, their positions and offices with our company, their principal occupations and business experience during at least the past five years and the names of other public companies for which they currently serve, or have served within the past five years, as a director. We have also included information about each director's specific experience, qualifications, attributes or skills that led our board of directors to conclude that such individual should serve as one of our directors. We also believe that all of our directors, including our nominees, have a reputation for integrity, honesty and adherence to high ethical standards. They each have demonstrated business acumen and an ability to exercise sound judgment, as well as a commitment of service to Idera and our board of directors.

Recommendation of the Board of Directors

Our board of directors unanimously recommends that the stockholders vote FOR the election of Dr. Neu and Mr. Reardon as Class I directors.

Class I Nominees Terms to Expire in 2017

Kelvin M. Neu, M.D.

Director since 2014

Dr. Neu, age 40, is a Managing Director of Baker Bros. Advisors LP and has been with the firm since 2004. The firm primarily manages long-term investment funds focused on publicly traded life sciences companies.

Table of Contents

Dr. Neu also serves on the board of directors of XOMA Corporation and previously served as a director of AnorMED Inc. and diaDexus, Inc. Dr. Neu holds an A.B. in Molecular Biology from Princeton University and an M.D. from Harvard Medical School and the Harvard-MIT Division of Health Sciences and Technology. He also trained for three years in the Immunology Ph.D. program at Stanford University. We believe that Dr. Neu's qualifications to sit on our board of directors include his scientific background, affiliation with one of our significant stockholders and knowledge of our industry.

William S. Reardon, C.P.A.

Director since 2002

Mr. Reardon, age 67, has been a director since 2002, and he served as lead independent director of our board of directors from September 2010 to July 2013. He served as an audit partner at PricewaterhouseCoopers LLP, where he led the Life Science Industry Practice for New England and the Eastern United States from 1986 until his retirement from the firm in July 2002. Mr. Reardon served on the board of the Emerging Companies Section of the Biotechnology Industry Organization from June 1998 to June 2000 and the board of directors of the Massachusetts Biotechnology Council from April 2000 to April 2002. He serves as a director of Synta Pharmaceuticals, Inc., a publicly traded biopharmaceutical company, and he served as a director of Oscient Pharmaceuticals Corporation, a publicly traded pharmaceutical company, from March 2003 to March 2010. Mr. Reardon has also served as a trustee of closed-end mutual funds H&Q Healthcare Investors and H&Q Life Sciences Investors since April 2010. We believe that Mr. Reardon's qualifications to sit on our board of directors include his accounting and financial experience, including as a partner at a leading accounting firm leading its life science practice, his role in keeping the board of directors and senior management team abreast of current accounting regulations and his experience as a member of several boards of directors of biotechnology companies. Additionally, we value Mr. Reardon's role in leading the board on matters of corporate governance, before, during and after his service as lead independent director.

Continuing Members of the Board of Directors

Class II Directors Terms to Expire in 2015

Julian C. Baker

Director since 2014

Mr. Baker, age 47, is Co-Managing Member of Baker Bros. Advisors LP, which he founded in 2000 with his brother, Dr. Felix J. Baker. The firm primarily manages long-term investment funds focused on publicly traded life sciences companies. Mr. Baker's career as a fund manager began in 1994 when he co-founded a biotechnology investing partnership with his brother and the Tisch Family. Previously, Mr. Baker was employed from 1988 to 1993 by the private equity investment arm of Credit Suisse First Boston Corporation. He also serves on the boards of directors of Incyte Corporation and Genomic Health, Inc. and previously served on the board of directors of Trimeris, Inc. Mr. Baker holds an A.B. from Harvard University. We believe that Mr. Baker's qualifications to sit on our board of directors include his financial expertise, affiliation with one of our significant stockholders, knowledge of our industry and significant public company board experience.

James A. Geraghty

Director since 2013

Mr. Geraghty, age 59, has served as chairman of our board of directors since July 2013. He has been an Entrepreneur in Residence at Third Rock Ventures since May 2013. Mr. Geraghty served as a Senior Vice President of Sanofi from April 2011 to December 2012. He served in various senior management roles at Genzyme Corporation from 1992 to April 2011, most recently as Senior Vice President, International Development. He previously served as a director of bluebird bio, Inc. and GTC Biotherapeutics, Inc. We believe that Mr. Geraghty's qualifications to sit on our board of directors include his public company board and management experience and his broad and deep knowledge of the industry in which we operate.

Robert W. Karr, M.D.

Director since 2005

Dr. Karr, age 65, has been Managing Member of StartUp Partners International LLC, a consulting firm serving pharmaceutical and biotechnology clients, since January 2010. Dr. Karr has served as managing director

Table of Contents

of Karr Pharm Consulting LLC since January 2008. Dr. Karr served as our President from December 2005 until December 2007. Prior to joining us, Dr. Karr was an independent consultant. From June 2000 through December 2004, Dr. Karr was a senior executive in Global Research & Development for Pfizer, Inc., a pharmaceutical company, where he served as Senior Vice President, Strategic Management from 2003 to 2004 and Vice President, Strategic Management from 2000 to 2003. Prior to its merger with Pfizer, Dr. Karr served as Vice President, Research & Development Strategy for Warner-Lambert Company, a pharmaceutical company. He also served on the board of directors of GTx, Inc., a publicly traded biotechnology company, from 2005 to 2011. We believe that Dr. Karr's qualifications to sit on our board of directors include his broad managerial and scientific experience in the pharmaceutical industry, his understanding of our company given his role as our former President and his continuing role as a director, and his contribution to the board of directors in discussions of our drug discovery programs, clinical development strategy and clinical programs.

Malcolm MacCoss, Ph.D.**Director since 2010**

Dr. MacCoss, age 66, founded Bohicket Pharma Consulting LLC in January 2010. In this position, Dr. MacCoss consults for several pharmaceutical companies worldwide on drug discovery issues. Previously, Dr. MacCoss served as the Group Vice President for Chemical Research at the Schering-Plough Research Institute of Schering-Plough Corporation, a pharmaceutical company that is now part of Merck & Co., Inc., from August 2008 to January 2010. In this role he served as the Head of Chemistry at the Schering-Plough Kenilworth, New Jersey site and as the chair of the Schering-Plough Global Chemistry Council, a forum for formulating global chemistry strategies. From 1999 to August 2008, Dr. MacCoss served as Vice President, Basic Chemistry at the Rahway, New Jersey site of Merck Research Laboratories, of Merck & Co., Inc., a pharmaceutical company. He also served as the Vice President of Basic Chemistry and Drug Discovery Sciences, as the Deputy Site-Head of the Rahway site and as the Chairman of the Merck World-Wide Chemistry Council. Dr. MacCoss is a Fellow of the Royal Society of Chemistry, and in 2009 he was admitted into the American Chemical Society Medicinal Chemistry Hall of Fame. In 2010 he received the ACS Division of Medicinal Chemistry National Award. In October 2013, he was appointed Visiting Professor of Chemistry for Medicine at the University of Oxford. He also serves on the Advisory Committee of the Executive Dean for the School of Arts and Sciences, Rutgers University. We believe that Dr. MacCoss' qualifications to sit on our board of directors include his extensive scientific background, his 20 plus years' experience with pharmaceutical companies, and his contribution to the board of directors in discussions of our drug discovery programs, clinical development strategy and clinical programs.

Class III Directors Terms to Expire in 2016**Sudhir Agrawal, D. Phil.****Director since 1993**

Dr. Agrawal, age 60, has been our President since September 2008 and our Chief Executive Officer since August 2004. He served as the chairman of our board of directors from September 2010 until July 2013. He also served as our Chief Scientific Officer from January 1993 until September 2010, as our President from February 2000 to October 2005 and as Acting Chief Executive Officer from February 2000 until September 2001. Dr. Agrawal joined us in 1990 and served in various capacities before his appointment as Chief Scientific Officer, including Vice President of Discovery and Senior Vice President of Discovery. Prior to joining us, Dr. Agrawal served as a Foundation Scholar at the Worcester Foundation for Experimental Biology in Massachusetts, and conducted research at the Medical Research Council's Laboratory of Molecular Biology in Cambridge, England from 1985 to 1986. We believe that Dr. Agrawal's qualifications to sit on our board of directors include his unique insights into our challenges, opportunities and operations that he has as a result of the roles he has played with us since our founding, including scientific founder, chief scientific officer, chief executive officer and chairman.

Table of Contents

Youssef El Zein

Director since 1992

Mr. El Zein, age 65, has been the Managing Partner of Pillar Invest Corporation, a Cayman Island company that has founded and is the General Partner of a family of funds, including Pillar Pharmaceuticals I, L.P. and Pillar Pharmaceuticals II, L.P., since 2011. Mr. El Zein has been the chairman and Chief Executive Officer of Pillar Invest (offshore) SAL since 2009. Mr. El Zein has been managing partner of Pillar Investment Limited, a private investment firm, since 1991. Mr. El Zein obtained his Bachelor of Arts in Economics from the American University of Beirut in 1970 and a postgraduate degree in Economics from St. Catherine's College, Oxford University in 1973. We believe that Mr. El Zein's qualifications to sit on our board of directors include his knowledge of our industry, his financial experience and significant role in various financings we have conducted recently and during his 22 years of service on our board of directors.

Mark Goldberg, M.D.

Director since 2014

Dr. Goldberg, age 59, has been the Executive Vice President for Medical and Regulatory Strategy of Synageva BioPharma Corp., a biopharmaceutical company, since January 2014 and was the Senior Vice President of Medical and Regulatory Affairs of Synageva BioPharma Corp. from September 2011 to January 2014. Dr. Goldberg served in a variety of senior management positions at Genzyme Corporation, a biotechnology company, most recently as Senior Vice President, Clinical Development and Global Therapeutic Group Head, Oncology and Personalized Genetic Health, from 1996 to July 2011. Prior to working at Genzyme Corporation, he was a full time staff physician at Brigham and Women's Hospital and Dana Farber Cancer Institute, where he still holds appointments. He has also been a Clinical Associate Professor of Medicine at Harvard Medical School since 1996. Dr. Goldberg is a board-certified medical oncologist and hematologist and has more than 50 published papers. Dr. Goldberg also serves on the board of directors of ImmunoGen, Inc. and previously served on the board of directors of Synageva BioPharma Corp. Dr. Goldberg received his A.B. from Harvard College and his M.D. from Harvard Medical School. We believe that Dr. Goldberg's qualifications to sit on our board of directors include his extensive scientific and medical background, public company board experience and extensive experience in the management and operations of pharmaceutical companies.

Eve E. Slater, M.D.

Director since 2010

Dr. Slater, age 68, is currently Professor of Clinical Medicine at Columbia University College of Physicians and Surgeons, where she has taught in various positions since 1983. Dr. Slater was Senior Vice President, Worldwide Policy at Pfizer, Inc. from May 2007 until June 2009. Dr. Slater was the Assistant Secretary for Health, United States Department of Health and Human Services from 2002 until 2003, and was the Acting Assistant Secretary for Health from 2001 until her confirmation by the United States Senate in 2002. Dr. Slater held senior management positions at Merck Research Laboratories from 1983 to 2001, including Senior Vice President of External Policy, Vice President of Corporate Public Affairs, Senior Vice President of Clinical and Regulatory Development, Executive Director of Biochemistry and Molecular Biology, and Senior Director of Biochemical Endocrinology. Dr. Slater was trained in Internal Medicine and Cardiology at Massachusetts General Hospital, is board certified in Internal Medicine and Cardiology and is a Fellow of the American College of Cardiology. We believe that Dr. Slater's qualifications to sit on our board of directors include her extensive scientific and medical background, significant public company board experience, and years of service with pharmaceutical companies and governmental institutions.

Director Compensation

We use a combination of cash and equity-based compensation to attract and retain candidates to serve on our board of directors. We do not compensate directors who are also our employees for their service on our board of directors. As a result, Dr. Agrawal does not receive any compensation for his service on our board of directors and did not receive any compensation for his service as chairman of the board of directors prior to Mr. Geraghty's appointment as chairman of the board of directors in July 2013.

Under our director compensation program in effect during 2013, or our 2013 director compensation program, we paid our non-employee directors retainers in cash. Each director received a cash retainer for service

Table of Contents

on the board of directors and for service on each committee on which the director was a member. The chairmen of each committee received higher retainers for such service. These fees were paid quarterly in arrears. During 2013, the fees paid to non-employee directors for service on the board of directors and for service on each committee of the board of directors on which the director was a member were as follows:

| | Member Annual Fee | Chairman Annual Fee |
|---|------------------------------|--------------------------------|
| Board of Directors | \$ 35,000 | \$ |
| Audit Committee | \$ 7,000 | \$ 15,000 |
| Compensation Committee | \$ 7,000 | \$ 15,000 |
| Nomination and Corporate Governance Committee | \$ 3,500 | \$ 7,500 |
| Service as Lead Director | \$ 17,500 | \$ |

Our 2013 director compensation program included a stock-for-fees policy, under which directors had the right to elect to receive common stock in lieu of cash fees. Prior to the adoption of our 2013 Stock Incentive Plan, these shares of common stock were issued under our 2008 Stock Incentive Plan. Following the adoption of our 2013 Stock Incentive Plan in July 2013, these shares of common stock were issued under our 2013 Stock Incentive Plan. The number of shares issued to participating directors was determined on a quarterly basis by dividing the cash fees to be paid through the issuance of common stock by the fair market value of our common stock, which was the closing price of our common stock, on the first business day of the quarter following the quarter in which the fees were earned. In 2013, Mr. Umari received 35,978 shares of our common stock in lieu of \$26,250 in cash fees. No other director elected to receive common stock in lieu of cash fees during 2013.

Under our 2013 director compensation program, we also reimbursed our directors for travel and other related expenses for attendance at meetings.

Under our 2013 director compensation program, upon their initial election to the board of directors, new non-employee directors received an initial option grant to purchase 30,000 shares of our common stock, and all non-employee directors received an annual option grant to purchase 20,000 shares of our common stock. The annual grants were made on the date of our 2013 annual meeting of stockholders.

During 2013, our compensation committee engaged Radford Surveys + Consulting, or Radford, to provide advice and recommendations regarding our director compensation program. As part of its engagement, Radford provided data on director compensation from a peer group of publicly traded companies which the committee believed had business life cycles, market capitalizations, products, research and development investment levels and number/capabilities of employees that were comparable to ours at that time. For additional information related to this peer group of companies, please see Executive Compensation Compensation Discussion and Analysis. After considering the data provided by Radford, the compensation committee determined that the Company's director compensation program should target a combination of cash and equity compensation at the 50th percentile of the market data provided by Radford for director compensation. In connection with its analysis, the compensation committee determined that the cash component of our 2013 director compensation program was at the 50th percentile, but that the equity component was below the 50th percentile. As a result, the compensation committee determined that an annual option grant to purchase 60,000 shares of our common stock would be consistent with the 50th percentile. Given that our non-employee directors had already received annual option grants to purchase 20,000 shares of our common stock in connection with our 2013 annual meeting of stockholders, the compensation committee recommended that our board of directors approve a one-time additional option grant to purchase 40,000 shares of our common stock to each of our non-employee directors. These one-time additional option grants were approved by our board of directors in August 2013.

Upon his election to the board of directors and appointment as chairman of the board in July 2013, Mr. Geraghty received an initial option grant to purchase 450,000 shares of our common stock, which included the initial option grant to purchase 30,000 shares of our common stock that he otherwise would have received

Table of Contents

upon his election to our board of directors in recognition of the time commitment he was expected to provide to our company as chairman of our board of directors and the fact that Mr. Geraghty would not receive any additional cash compensation for serving as chairman.

The options granted to our non-employee directors in 2013 vest quarterly over three years from the date of grant, subject to continued service as a director, and were granted under our 2008 Stock Incentive Plan prior to the adoption of our 2013 Stock Incentive Plan and under our 2013 Stock Incentive Plan following its adoption in July 2013. These options were granted with exercise prices equal to the fair market value of our common stock, which was the closing price of our common stock, on the date of grant and will become immediately exercisable in full if there is a change in control of our company.

Under our retirement policy for non-employee members of the board, if a non-employee director is deemed to retire, then:

all outstanding options held by such director will automatically vest in full; and

the period during which such director may exercise the options will be extended to the expiration of the option under the applicable option agreement.

Under the policy, a member of the board of directors will be deemed to have retired if:

the director resigns from the board or determines not to stand for re-election or is not nominated for re-election at a meeting of our stockholders and has served as a director for more than 10 years; or

the director does not stand for re-election or is not nominated for re-election due to the fact that he or she is or will be older than 75 at the end of such director's term.

The following table sets forth a summary of the compensation we paid to our non-employee directors who served on our board in 2013.

DIRECTOR COMPENSATION FOR 2013

| Name | Fees Earned or Paid in Cash (\$) | Option Awards \$(1) | Total (\$) |
|----------------------|--|------------------------|------------|
| Youssef El Zein | \$ 47,500 | \$ 45,280 | \$ 92,780 |
| James A. Geraghty(2) | \$ 18,375 | \$ 214,626 | \$ 233,001 |
| C. Keith Hartley | \$ 49,500 | \$ 45,280 | \$ 94,780 |
| Robert W. Karr | \$ 42,000 | \$ 45,280 | \$ 87,280 |
| Malcolm MacCoss | \$ 48,000 | \$ 45,280 | \$ 93,280 |
| William S. Reardon | \$ 62,250 | \$ 45,280 | \$ 107,530 |
| Eve E. Slater | \$ 42,000 | \$ 45,280 | \$ 87,280 |
| Abdul-Wahab Umari | \$ 35,000(3) | \$ 45,280 | \$ 80,280 |

(1) These amounts represent the aggregate grant date fair value of option awards made to each listed director in 2013 as computed in accordance with Financial Accounting Standards Board Accounting Standards Codification Topic 718, Stock Compensation, or ASC 718. These amounts do not represent the actual amounts paid to or realized by the directors during 2013. See Note 2(j) to the financial statements in our annual report on Form 10-K for the year ended December 31, 2013 regarding assumptions we made in determining the fair value of option awards. As of December 31, 2013, our non-employee directors held options to purchase shares of our common stock as follows: Mr. El Zein: 163,345; Mr. Geraghty: 490,000; Mr. Hartley: 163,345; Dr. Karr: 245,375; Dr. MacCoss: 126,000; Mr. Reardon: 163,345; Dr. Slater: 116,000; and Mr. Umari: 90,000.

(2) Mr. Geraghty joined our board of directors in July 2013 and our nominating and corporate governance committee in September 2013.

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- (3) Includes cash meeting fees of \$26,250 in lieu of which of Mr. Umari elected to receive 35,978 shares of our common stock.

- 11 -

Table of Contents

CORPORATE GOVERNANCE INFORMATION

Board of Directors

Our board of directors is responsible for establishing our broad corporate policies and overseeing the management of our company. Our chief executive officer and our other executive officers are responsible for our day-to-day operations. Our board evaluates our corporate performance and approves, among other things, our corporate strategies and objectives, operating plans, major commitments of corporate resources and significant policies. Our board also evaluates and appoints our executive officers.

Our board of directors met 18 times during 2013, including regular, special and telephonic meetings. Each director who served as a director during 2013 attended at least 75% of the total number of board meetings held during 2013 while he or she was a director and of the total number of meetings held by all board committees on which he or she served during 2013.

Board Leadership Structure

Our board does not have a policy on whether the offices of chairman of the board and chief executive officer should be separate and, if they are to be separate, whether the chairman of the board should be selected from among the independent directors or should be an employee of our company. Our board believes that it should have the flexibility to make these determinations at any given point in time in the way that it believes best to provide appropriate leadership for our company at that time. From September 2010 until July 2013, the positions of chairman of the board and chief executive officer were both held by Dr. Agrawal. Since July 2013, the positions of chairman of the board and chief executive officer have been separate, with Mr. Geraghty serving as chairman of our board and Dr. Agrawal serving as chief executive officer. Our board believes that this separation allows our chief executive officer to focus on our day-to-day business, while allowing the chairman of the board to lead the board in its fundamental role of providing advice to and independent oversight of management.

Our board recognizes that no single leadership model is right for all companies and at all times and that depending on the circumstances, other leadership models, such as a combined chairman and chief executive officer, might be appropriate. Accordingly, the board periodically reviews its leadership structure. Pursuant to our corporate governance guidelines, if the chairman is not an independent director, the board may elect a lead director from its independent directors. In such case, the chairman and chief executive officer would consult periodically with the lead director on board matters and on issues facing our company. In addition, the lead director would serve as the principal liaison between the chairman of the board and the independent directors and would preside at any executive session of independent directors.

Board's Role in Risk Oversight

Our board of directors, as a whole, has responsibility for risk oversight, with reviews of certain areas being conducted by relevant committees that report directly to the board of directors. The oversight responsibility of the board of directors and its committees is enabled by management reporting processes that are designed to provide visibility to the board of directors about the identification, assessment and management of critical risks and management's risk mitigation strategies. These areas of focus include competitive, economic, operational, financial (accounting, credit, liquidity and tax), legal, regulatory, compliance, health, safety, environmental, political and reputational risks. Our board of directors regularly reviews information regarding our strategy, operations, credit and liquidity, as well as the risks associated with each. Our compensation committee is responsible for overseeing risks relating to our executive compensation plans and arrangements. Our audit committee is responsible for overseeing financial risks and risks associated with related party transactions. Our nominating and corporate governance committee is responsible for overseeing risks associated with the independence of the board of directors. While each committee is responsible for evaluating certain risks and overseeing the management of such risks, our entire board of directors is regularly informed through committee reports about such risks.

Table of Contents

Board Committees

Our board of directors has established three standing committees: audit, compensation and nominating and corporate governance. Each of our audit, compensation and nominating and corporate governance committees operates under a charter that has been approved by our board of directors. Our board of directors has also adopted corporate governance guidelines to assist our board in the exercise of its duties and responsibilities. Current copies of the charters for the audit, compensation and nominating and corporate governance committees and the corporate governance guidelines are posted on our website, www.iderapharma.com, and can be accessed by clicking [Investors](#) and [Corporate Governance](#).

Audit Committee

Our audit committee's responsibilities include:

appointing, approving the compensation of, and assessing the independence of our independent registered public accounting firm;

overseeing the work of our independent registered public accounting firm, including through the receipt and consideration of certain reports from such accounting firm;

reviewing and discussing with management and our independent registered public accounting firm our annual and quarterly financial statements and related disclosures;

monitoring our internal control over financial reporting, disclosure controls and procedures and code of business conduct and ethics;

discussing our risk management policies;

establishing procedures for the receipt and retention of accounting related complaints and concerns;

reviewing and approving related party transactions;

meeting independently with our independent registered public accounting firm and management; and

preparing the audit committee report required by SEC rules, which is included in the section of this proxy statement entitled [Accounting Matters Report of the Audit Committee](#).

The current members of our audit committee are Mr. Reardon (Chairman), Mr. Hartley and Dr. Karr. Our board of directors has determined that all three members of the audit committee are audit committee financial experts within the meaning of SEC rules and regulations. During 2013, our audit committee held six meetings in person or by teleconference.

Compensation Committee

Our compensation committee's responsibilities include:

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annually reviewing and approving corporate goals and objectives relevant to compensation for our executive officers;

determining the compensation of our senior executives;

overseeing the evaluation of our senior executives;

overseeing and administering our cash and equity incentive plans;

reviewing and making recommendations to the board of directors with respect to director compensation;

reviewing and discussing annually with management the compensation discussion and analysis required by the SEC rules and included in this proxy statement; and

preparing the compensation committee report required by SEC rules, which is included in the section of this proxy statement entitled Executive Compensation Compensation Committee Report.

- 13 -

Table of Contents

The current members of our compensation committee are Dr. MacCoss (Chairman), Mr. El Zein, and Dr. Slater. In 2013, Mr. El Zein served as the chairman of our compensation committee prior to the appointment of Dr. MacCoss to such position in March 2013. During 2013, the compensation committee held 13 meetings in person or by teleconference.

The processes and procedures followed by our compensation committee in considering and determining director and executive compensation are described above under the heading Executive Compensation.

Nominating and Corporate Governance Committee

Our nominating and corporate governance committee's responsibilities include:

identifying individuals qualified to become members of our board of directors;

recommending to our board of directors the persons to be nominated for election as directors or to fill vacancies on our board of directors, and the persons to be appointed to each of the committees of the board of directors;

reviewing and making recommendations to the board of directors with respect to management succession planning;

developing and recommending to the board of directors corporate governance principles; and

overseeing periodic evaluations of the board of directors.

The current members of our nominating and corporate governance committee are Mr. Hartley (Chairman), Mr. Geraghty, Mr. El Zein and Mr. Reardon. During 2013, the nominating and corporate governance committee held five meetings in person or by teleconference.

The processes and procedures followed by our nominating and corporate governance committee in identifying and evaluating director candidates are described below under the heading Director Nomination Process.

Director Independence

Under applicable rules of the Nasdaq Stock Market, a director will only qualify as an independent director if, in the opinion of our board of directors, that person does not have a relationship which would interfere with the exercise of independent judgment in carrying out the responsibilities of a director. Our board of directors has determined that Mr. Baker, Mr. El Zein, Mr. Geraghty, Dr. Goldberg, Mr. Hartley, Dr. Karr, Dr. MacCoss, Dr. Neu, Mr. Reardon, Dr. Slater and Mr. Umari and all of the members of each of the audit, compensation and nominating and corporate governance committees are independent as defined under applicable rules of the Nasdaq Stock Market including, in the case of all members of the audit committee, the independence requirements contemplated by Rule 10A-3 under the Exchange Act and, in the case of all members of the compensation committee, the independence requirements contemplated by Rule 10C-1 under the Exchange Act.

Director Nomination Process

The process followed by our nominating and corporate governance committee to identify and evaluate director candidates includes requests to members of our board of directors and others for recommendations, meetings from time to time to evaluate biographical information and background material relating to potential candidates and interviews of selected candidates by members of our nominating and corporate governance committee and our board of directors. The nominating and corporate governance committee has from time to time used a third-party recruiting firm to identify and interview potential candidates.

Table of Contents

In considering whether to recommend any particular candidate for inclusion in the board's slate of recommended director nominees, the nominating and corporate governance committee will apply the criteria set forth in our corporate governance guidelines. These criteria include the candidate's:

business acumen;

knowledge of our business and industry;

age;

experience;

diligence;

conflicts of interest;

ability to act in the interests of all stockholders; and

in the case of the renomination of existing directors, performance on our board of directors and on any committee of which the director was a member.

Our corporate governance guidelines also provide that candidates should not be discriminated against on the basis of race, religion, national origin, sex, sexual orientation, disability or any other basis proscribed by law and that our nominating and corporate governance committee should consider the value of diversity of the board of directors when evaluating particular candidates. The committee has not adopted any formal or informal diversity policy and treats diversity as one of the criteria to be considered by the committee. The committee does not assign specific weights to particular criteria that the committee reviews and no particular criterion is a prerequisite for the consideration of any prospective nominee. We believe that the backgrounds and qualifications of our directors, considered as a group, should provide a composite and diverse mix of experience, knowledge and abilities that will allow the board of directors to fulfill its responsibilities.

Stockholder Nominees

Stockholders may recommend individuals to the nominating and corporate governance committee for consideration as potential director candidates by submitting the individuals' names, together with appropriate biographical information and background materials and a statement as to whether the stockholder or group of stockholders making the recommendation has beneficially owned more than 5% of our common stock for at least one year as of the date such recommendation is made, to Nominating and Corporate Governance Committee, c/o Secretary, Idera Pharmaceuticals, Inc., 167 Sidney Street, Cambridge, Massachusetts 02139. Assuming that appropriate biographical and background material has been provided on a timely basis, the nominating and corporate governance committee will evaluate stockholder-recommended candidates by following substantially the same process, and applying substantially the same criteria, as it follows for candidates submitted by others. If the board of directors determines to nominate a stockholder-recommended candidate and recommends his or her election, then his or her name will be included in our proxy card for the next annual meeting.

Stockholders also have the right under our bylaws to nominate director candidates directly, without any action or recommendation on the part of the nominating and corporate governance committee or the board of directors, by following the procedures set forth in our bylaws, including advance notice requirements. Candidates nominated by stockholders in accordance with the procedures set forth in our bylaws will not be included in our proxy card for the next annual meeting. See "Information about the 2014 annual meeting - How and when may I submit a proposal for the 2015 annual meeting of stockholders?" for more information about these procedures.

Communicating with our Board of Directors

Our board of directors will give appropriate attention to written communications that are submitted by stockholders and will respond if and as appropriate. The chairman of the board of directors (if an independent director) or the lead independent director, if any, is primarily responsible for monitoring communications from stockholders and for providing copies or summaries to the other directors, as he or she considers appropriate.

- 15 -

Table of Contents

Communications are forwarded to all directors if they relate to important substantive matters and include suggestions or comments that the chairman of the board of directors or lead independent director, as the case may be, considers to be important for the directors to know. In general, communications relating to corporate governance and long-term corporate strategy are more likely to be forwarded than communications relating to ordinary business affairs, personal grievances and matters that involve repetitive or duplicative communications.

Stockholders who wish to send communications on any topic to the board of directors should address such communications to Board of Directors, c/o Secretary, Idera Pharmaceuticals, Inc., 167 Sidney Street, Cambridge, Massachusetts 02139.

Each communication from a stockholder should include the following information in order to permit stockholder status to be confirmed and to provide an address to forward a response if deemed appropriate:

the name, mailing address and telephone number of the stockholder sending the communication;

the number of shares held by the stockholder; and

if the stockholder is not a record owner of our securities, the name of the record owner of our securities beneficially owned by the stockholder.

Directors are responsible for attending our annual meetings of stockholders. One of our directors attended the 2013 annual meeting of stockholders in person.

Compensation Committee Interlocks and Insider Participation

Our compensation committee currently consists of Dr. MacCoss, Mr. El Zein and Dr. Slater. No member of our compensation committee was at any time during 2013, or was formerly, an officer or employee of ours. No member of our compensation committee engaged in any related person transaction involving our company during 2013 other than Mr. El Zein. See Transactions with Related Persons for information about the terms of the transactions we engaged in with affiliates of Mr. El Zein. None of our executive officers has served as a director or member of the compensation committee (or other committee serving the same function as the compensation committee) of any other entity, while an executive officer of that other entity served as a director or member of our compensation committee.

Executive Officers of Idera

The following table sets forth the names, ages and positions of our executive officers as of March 14, 2014:

| Name | Age | Position |
|------------------------------|-----|---|
| Sudhir Agrawal, D. Phil.* | 60 | President and Chief Executive Officer |
| Louis J. Arcudi, III, M.B.A. | 53 | Senior Vice President of Operations, Chief Financial Officer, Treasurer and Secretary |
| Louis Brenner, M.D.** | 44 | Senior Vice President and Chief Medical Officer |
| Timothy M. Sullivan, Ph.D. | 59 | Vice President, Development Programs and Alliance Management |
| Robert D. Arbeit, M.D. | 66 | Vice President, Clinical Development |

* Dr. Agrawal is a continuing member of our board of directors. See Proposal One Election of Directors for more information about Dr. Agrawal.

** Dr. Brenner joined the Company in January 2014.

Louis J. Arcudi, III, M.B.A., has been our Senior Vice President of Operations since April 2011 and our Chief Financial Officer, Treasurer and Secretary since he joined us in December 2007. Prior to joining us, Mr. Arcudi served as Vice President of Finance and Administration and Treasurer for Peptimmune, Inc., a biotechnology company, from 2003 to 2007. From 2000 to 2003, Mr. Arcudi was Senior Director of Finance and

Table of Contents

Administration at Genzyme Molecular Oncology Corporation, a division of Genzyme Corporation, a biotechnology company. He was Director of Finance Business Planning and Operations International at Genzyme from 1998 to 2000. Prior to joining Genzyme, he held finance positions with increasing levels of responsibility at Cognex Corporation, a supplier of machine vision systems, Millipore Corporation, a provider of technologies, tools and services for bioscience, research and biopharmaceutical manufacturing, and General Motors Corporation, an automobile manufacturer. Mr. Arcudi received an M.B.A. from Bryant College and a B.S. in accounting and information systems from the University of Southern New Hampshire.

Louis Brenner, M.D., joined us in January 2014 as Senior Vice President and Chief Medical Officer. Prior to joining us, Dr. Brenner served as Senior Vice President and Chief Medical Officer for Radius Health, Inc., a biopharmaceutical company, from November 2011 to January 2014, as principal of First and Goal Life Sciences Consulting, LLC, from January 2011 to November 2011, as Senior Vice President of AMAG Pharmaceuticals, Inc., a biopharmaceutical company, from September 2006 to December 2010, and as Senior Director of Business Development for the Renal and Transplantation Units at Genzyme Corporation, a biotechnology company, from 2004 to 2006 and held various other positions at Genzyme from 2002 to 2004. Dr. Brenner earned a B.S. in Biology from Yale University, an M.D. from Duke University and an M.B.A. from the Harvard Business School.

Timothy M. Sullivan, Ph.D., has been our Vice President, Development Programs and Alliance Management since April 2010 and was our Vice President, Development Programs from August 2004 until April 2010. He joined us in 2002 as Senior Director, Preclinical Drug Development. His prior professional experience includes positions as Executive Director of Non-Clinical Drug Safety Evaluation for Purdue Pharma L.P., a pharmaceutical company, from 1999 to 2002, and Vice President of Eastern Operations for Oread, Inc., a contract drug development organization, from 1997 to 1999. Prior to 1997, Dr. Sullivan held a variety of technical management roles with other pharmaceutical companies and contract research organizations, including Adria, Battelle, Roma Toxicology Centre, and in veterinary medicine, including International Minerals & Chemical. Dr. Sullivan earned his B.S. in microbiology from Michigan State University in 1975. His graduate studies were at Purdue University, where he earned an M.S. degree in health physics in 1978 and a Ph.D. in toxicology in 1981.

Robert D. Arbeit, M.D., has been our Vice President, Clinical Development since August 2009. Prior to joining us, Dr. Arbeit was Vice President, Clinical Development, from July 2007 to July 2009, and Executive Director, Clinical Development, from February 2003 until July 2007, at Paratek Pharmaceuticals, Inc., a pharmaceutical company. Prior to that, from January 2001 to January 2003, he served at Cubist Pharmaceuticals, Inc., a pharmaceutical company, as Executive Medical Director. From 1979 to 2000, Dr. Arbeit held positions with increasing levels of responsibility at the VA Medical Center in Boston, where his last position was Associate Chief of Staff for Research. Dr. Arbeit received his B.A. from Williams College and earned an M.D. at Yale University School of Medicine. He completed a medical residency at Yale-New Haven Hospital, CT and a Clinical Fellowship in Infectious Diseases at Beth Israel Hospital, Boston, MA.

SECURITY OWNERSHIP OF CERTAIN BENEFICIAL

OWNERS AND MANAGEMENT

On March 14, 2014, we had 82,438,840 shares of common stock issued and outstanding and 424,242 shares of Series E preferred stock issued and outstanding. The following table sets forth information we know about the beneficial ownership of our common stock and our Series E preferred stock, as of March 14, 2014, by:

each person known by us to own beneficially more than 5% of the outstanding shares of our common stock;

each person known to us to beneficially own more than 5% of the outstanding shares of our Series E preferred stock;

each of our directors;

each of our named executive officers; and

all directors and executive officers as a group.

Table of Contents

We have determined beneficial ownership in accordance with the rules of the SEC, and the information in the table below is not necessarily indicative of beneficial ownership for any other purpose. Under such rules, beneficial ownership of a person includes any shares as to which such person has the sole or shared voting power or investment power. In addition, under such rules, beneficial ownership of a person includes any shares that such person has the right to acquire within 60 days after March 14, 2014 through the conversion of any convertible security or the exercise of any stock option, warrant or other right. These shares, however, are not considered outstanding when computing the percentage ownership of each other person.

Unless otherwise indicated in the footnotes to the table below, each stockholder named in the table has sole investment and voting power (or shares such power with his or her spouse) with respect to the shares shown as beneficially owned by them. The inclusion of any shares deemed beneficially owned does not constitute an admission of beneficial ownership of such shares.

| Name and Address of Beneficial Owner(1) | Amount and Nature of Beneficial Ownership of Common Stock | % of Common Stock Beneficially Owned | Amount and Nature of Beneficial Ownership of Series E Preferred Stock | % of Series E Preferred Stock Beneficially Owned |
|--|---|--|---|---|
| 5% Stockholders | | | | |
| Pillar Investment Entities c/o Pillar Invest Offshore SAL Starco Ctr Bloc B, 3rd Flr, Omar Daouk St. Beirut, M8 2020-3313 | 17,191,892(2) | 19.99%(2) | 424,242(3) | 100% |
| Directors and Named Executive Officers | | | | |
| Youssef El Zein | 17,191,892(4) | 19.99%(2) | 424,242(5) | 100% |
| Sudhir Agrawal, D. Phil. | 1,702,206(6) | 2.03% | | |
| Robert D. Arbeit, M.D. | 214,152(7) | * | | |
| Louis J. Arcudi, III | 444,384(8) | * | | |
| Julian C. Baker | 4,244,936(9) | 4.99%(9) | | |
| James A. Geraghty | 520,183(10) | * | | |
| Mark Goldberg | 2,500(11) | * | | |
| C. Keith Hartley | 338,727(12) | * | | |
| Robert W. Karr, M.D. | 193,341(13) | * | | |
| Malcolm MacCoss, Ph.D. | 70,758(14) | * | | |
| Kelvin M. Neu | | | | |
| William S. Reardon | 123,337(15) | * | | |
| Eve E. Slater | 57,667(16) | * | | |
| Timothy M. Sullivan, Ph.D. | 395,756(17) | * | | |
| Abdul-Wahab Umari | 91,987(18) | * | | |
| All current directors and executive officers as a group (16 individuals) | 25,591,826(19) | 27.82% | 424,242(3) | 100% |

* Less than 1%

- Except as otherwise noted, the address for each person listed above is c/o Idera Pharmaceuticals, Inc., 167 Sidney Street, Cambridge, Massachusetts 02139.
- Consists of (i) 6,266,175 shares of common stock held by Pillar Pharmaceuticals I, L.P., or Pillar I, (ii) 2,600,000 shares of common stock held by Pillar Pharmaceuticals III, L.P., or Pillar III, (iii) 3,329,032 shares of common stock held by Participations Besancon, or Besancon, and over which Pillar Invest Corporation has investment discretion, pursuant to an advisory agreement between Pillar Invest Corporation and Besancon, or the Advisory Agreement, (iv) 845,161 shares of common stock held by Pillar Pharmaceuticals IV, L.P., or Pillar IV, (v) 2,460,880 shares of common stock issuable upon conversion of 123,044 shares of Series E preferred stock held by Pillar Pharmaceuticals II, L.P., or Pillar II, (vi) 575,758 shares of common stock issuable upon exercise of warrants to purchase common stock held by Pillar I, (vii) 313,341 shares of common stock issuable upon exercise of warrants to purchase common stock held by

Table of Contents

- Pillar II, (viii) 110,901 shares of common stock issuable upon exercise of warrants to purchase common stock held by Besancon and over which Pillar Invest Corporation has investment discretion pursuant to the Advisory Agreement, (ix) 586,101 shares of common stock held directly by Mr. El Zein and (x) 104,543 shares of common stock subject to outstanding stock options that are exercisable within 60 days after March 14, 2014 held by Mr. El Zein. As a result of the application of the Conversion Cap, as described below in this footnote, the table above does not include the following as being beneficially owned by the Pillar Investment Entities: (a) 3,805,940 shares of common stock issuable upon conversion of 190,297 shares of Series E preferred stock held by Pillar II; (b) 2,218,020 shares of common stock issuable upon conversion of 110,901 shares of Series E preferred stock held by Besancon and over which Pillar Invest Corporation has investment discretion, pursuant to the Advisory Agreement; (c) 3,810,650 shares of common stock issuable upon exercise of warrants to purchase common stock held by Pillar I; (d) 6,266,820 shares of common stock issuable upon exercise of warrants to purchase common stock held by Pillar II; (e) 4,618,020 shares of common stock issuable upon exercise of warrants to purchase common stock held by Besancon and over which Pillar Invest Corporation has investment discretion pursuant to the Advisory Agreement; and (f) 2,600,000 shares of common stock issuable upon exercise of a warrant to purchase common stock held by Pillar III. Mr. El Zein is a director and controlling stockholder of Pillar Invest Corporation, which is the general partner of Pillar I, Pillar II, Pillar III and Pillar IV, and is a limited partner of Pillar I, Pillar II, Pillar III and Pillar IV. Mr. El Zein expressly disclaims beneficial ownership over shares held directly by Pillar I, Pillar II, Pillar III, Pillar IV and indirectly by Pillar Invest Corporation, including the shares of Series E preferred stock and warrants to purchase common stock issued in connection therewith held by Besancon, or the Besancon Securities. Pillar I, Pillar II, Pillar III and Pillar IV expressly disclaim beneficial ownership of the Besancon Securities. Besancon is an investment fund having no affiliation with Mr. El Zein, Pillar I, Pillar II, Pillar III, Pillar IV or Pillar Invest Corporation. The information in this footnote is based on a Schedule 13D/A filed with the SEC on October 9, 2013 and on information provided to the Company by Mr. El Zein. Pursuant to the terms of the Series E preferred stock and warrants to purchase common stock issued to the Pillar Investment Entities, the shares of Series E preferred stock cannot be converted by the holder thereof into shares of our common stock and the warrants to purchase common stock issued to the Pillar Investment Entities cannot be exercised by the holders thereof with respect to any portion of the shares, to the extent that such conversion or exercise would result in the Pillar Investment Entities beneficially owning more than 19.99% of (x) the number of shares of common stock outstanding or (y) the voting power of our securities outstanding immediately after giving effect to the conversion of Series E preferred stock or exercise of the warrants to purchase common stock. This limitation on conversion and exercise of the Series E preferred stock and warrants to purchase common stock issued to the Pillar Investment Entities is referred to in this footnote as the Conversion Cap. In addition, pursuant to the terms of the purchase agreements under which such securities were acquired, the purchasers have each agreed that for so long as such purchaser and its affiliates beneficially own more than 19.99% of our outstanding common stock, such purchaser, and its affiliates will vote any shares held by them in excess of the number of shares equal to 19.99% of the outstanding common stock (including the shares of common stock issuable upon conversion of the Series E preferred stock) with respect to any matter put to a vote of the holders of common stock in the same manner and percentage as the holders of the common stock vote on such matter.
- (3) Consists of shares of Series E preferred stock held by Pillar II and the Series E preferred stock held by Besancon.
- (4) Consists of shares reported under footnote 2 to this table above. Mr. El Zein is a director and controlling stockholder of Pillar Invest Corporation, which is the general partner of Pillar I, Pillar II, Pillar III and Pillar IV, and is a limited partner of Pillar I, Pillar II, Pillar III and Pillar IV. Accordingly, Mr. El Zein may be deemed to have sole power to direct the voting and disposition of the shares of common stock held directly by Pillar I, Pillar II, Pillar III and Pillar IV and indirectly by Pillar Invest Corporation, including the Besancon Securities. Mr. El Zein expressly disclaims beneficial ownership over shares held directly by Pillar I, Pillar II, Pillar III and Pillar IV, and indirectly by Pillar Invest Corporation, including the Besancon Securities, except to the extent of his pecuniary interest therein, if any, by virtue of his ownership interest in Pillar Invest Corporation and his limited partnership interest in Pillar I, Pillar II, Pillar III and Pillar IV.

Table of Contents

- (5) Consists of shares of Series E preferred stock held by Pillar II and Besancon. Mr. El Zein is a director and controlling stockholder of Pillar Invest Corporation, which is the general partner of Pillar II, is a limited partner of Pillar II and has investment discretion over shares held by Besancon pursuant to the Advisory Agreement. Accordingly, Mr. El Zein may be deemed to have sole power to direct the voting and disposition of the shares of Series E preferred stock held directly by Pillar II and Besancon. Mr. El Zein expressly disclaims beneficial ownership of any shares of Series E preferred stock held directly by Pillar II or indirectly by Pillar Invest Corporation, including the Besancon Securities.
- (6) Includes 1,575,929 shares of common stock subject to outstanding stock options that are exercisable within 60 days after March 14, 2014.
- (7) Includes 206,592 shares of common stock subject to outstanding stock options that are exercisable within 60 days after March 14, 2014.
- (8) Includes 430,187 shares of common stock subject to outstanding stock options that are exercisable within 60 days after March 14, 2014.
- (9) Consists of (i) 171,548 shares of our common stock owned by 667, L.P., (ii) 1,406,423 shares of our common stock owned by Baker Brothers Life Sciences, L.P., (iii) 35,105 shares of our common stock owned by 14159, L.P. and (iv) 2,631,860 shares of common stock issuable upon exercise of warrants to purchase common stock held by Baker Brothers Life Sciences, L.P. As a result of the application of the Beneficial Ownership Cap, as described below in this footnote, the table above does not include the following as being beneficially owned by Mr. Baker: (a) 4,640,773 shares of common stock issuable upon exercise of warrants to purchase common stock owned by 667, L.P., (b) 34,275,155 shares of common stock issuable upon exercise of warrants to purchase common stock owned by Baker Brothers Life Sciences, L.P. and (c) 919,591 shares of common stock issuable upon exercise of warrants to purchase common stock owned by 14159, L.P. Under the terms of the warrants issued to 667, L.P., Baker Brothers Life Sciences, L.P. and 14159, L.P., which we refer to collectively as the Funds, the Funds are not permitted to exercise such warrants to purchase common stock to the extent that such exercise would result in the Funds (and their affiliates) beneficially owning more than 4.99% of the number of shares of our common stock outstanding immediately after giving effect to the issuance of shares of common stock issuable upon exercise of such warrants to purchase common stock. This limitation on exercise of the warrants to purchase common stock issued to the Funds is referred to in this footnote as the Beneficial Ownership Cap. The Funds have the right to increase this beneficial ownership limitation in their discretion on 61 days prior written notice to us, provided that in no event are the Funds permitted to exercise such warrants to purchase common stock to the extent that such exercise would result in the Funds (and their affiliates) beneficially owning more than 19.99% of the number of shares of our common stock outstanding or the combined voting power of our securities outstanding immediately after giving effect to the issuance of shares of common stock issuable upon exercise of such warrants to purchase common stock. Mr. Baker is a managing member of Baker Bros. Advisors LP and is a principal of Baker Bros. Advisors (GP), LLC, the sole general partner of Baker Bros. Advisors LP. Baker Bros. Advisors LP serves as the investment advisor to the Funds. Accordingly, Mr. Baker may be deemed to have sole power to direct the voting and disposition of the shares of common stock held directly by the Funds and indirectly by Baker Bros. Advisors LP and Baker Bros. Advisors (GP), LLC. Mr. Baker expressly disclaims beneficial ownership over shares held directly by the Funds and indirectly by Baker Bros. Advisors LP and Baker Bros. Advisors (GP), LLC, except to the extent of his pecuniary interest therein, if any, by virtue of his pecuniary interest therein.
- (10) Includes 119,170 shares of common stock subject to outstanding stock options that are exercisable within 60 days after March 14, 2014.
- (11) Consists of shares of common stock subject to outstanding stock options that are exercisable within 60 days after March 14, 2014.
- (12) Includes 104,543 shares of common stock subject to outstanding stock options that are exercisable within 60 days after March 14, 2014. Also includes 92,434 shares of common stock and 90,000 shares of common stock issuable upon exercise of a warrant to purchase common stock held in a Defined Benefit Pension Plan, owned and controlled solely by Mr. Hartley.

Table of Contents

- (13) Includes 549 shares of common stock held by the Robert W. Karr Revocable Trust and 5,750 shares held by the Jean G. Karr Revocable Trust for which Dr. Karr is trustee and beneficiary. Dr. Karr disclaims beneficial ownership of all shares held in the Robert W. Karr Revocable Trust. Also includes 187,042 shares of common stock subject to outstanding stock options that are exercisable within 60 days after March 14, 2014.
- (14) Includes 67,667 shares of common stock subject to outstanding stock options that are exercisable within 60 days after March 14, 2014.
- (15) Includes 104,543 shares of common stock subject to outstanding stock options that are exercisable within 60 days after March 14, 2014.
- (16) Consists of shares of common stock subject to outstanding stock options that are exercisable within 60 days after March 14, 2014.
- (17) Includes 370,842 shares of common stock subject to outstanding stock options that are exercisable within 60 days after March 14, 2014.
- (18) Includes 26,667 shares of common stock subject to outstanding stock options that are exercisable within 60 days after March 14, 2014.
- (19) Includes 3,357,892 shares of common stock subject to outstanding stock options held by the directors and executive officers as a group that are exercisable within 60 days after March 14, 2014, shares reported in clauses (i) through (viii) of the first sentence of footnote 2 to this table above, shares reported in the first sentence of footnote 9 to this table above, shares reported in the first sentence of footnote 13 to this table above and shares reported in the second sentence of footnote 12 to this table above.

Table of Contents

EXECUTIVE COMPENSATION

Compensation Discussion and Analysis

Executive Summary

The compensation committee of our board of directors is responsible for establishing compensation policies with respect to our executive officers, including our chief executive officer and our other executive officers who are listed in the Summary Compensation table below and who we refer to as named executive officers. Our compensation committee makes compensation decisions relating to our executive officers after consultation with our board of directors.

This section discusses the principles underlying our executive compensation policies and decisions and the most important factors relevant to an analysis of these policies and decisions. It provides qualitative information regarding the manner and context in which compensation is awarded to and earned by our named executive officers. As further discussed in this section, our compensation and benefit programs help us attract, retain and motivate individuals who will maximize our business results by working to meet or exceed established company or individual objectives. In addition, we reward our executive officers for meeting certain developmental milestones, such as completing advancements in product candidate development, strategic partnerships or other financial transactions that add to our capital resources or create value for stockholders. We also decline to increase salaries, make bonus awards or issue equity compensation in the event that our corporate performance falls below expectations or developmental milestones are not met.

Compensation Philosophy and Objectives

The compensation committee seeks to achieve the following broad goals in connection with our executive compensation programs and decisions regarding individual compensation:

attract, retain and motivate the best possible executive talent;

ensure executive compensation is aligned with our corporate strategies and business objectives, including our short-term operating goals and longer-term strategic objectives;

promote the achievement of key strategic and financial performance measures by linking short- and long-term cash and equity incentives to the achievement of measurable corporate and individual performance goals; and

align executives' incentives with the creation of stockholder value.

To achieve these objectives, the compensation committee evaluates our executive compensation program with the goal of setting compensation at levels the committee believes are competitive with those of other companies in our industry and our region that compete with us for executive talent. In addition, our executive compensation program ties a substantial portion of each executive officer's overall compensation to key strategic, financial, research and operational goals such as clinical trial and regulatory progress, intellectual property portfolio development, establishment and maintenance of key strategic relationships and exploration of business development opportunities, as well as our financial and operational performance. We also provide a portion of our executive compensation in the form of stock options or other stock awards that vest over time from the time of the grant of the option awards and from the time of achievement of performance milestones, which we believe helps to retain our executives and align their interests with those of our stockholders by allowing them to participate in the longer term success of our company as reflected in stock price appreciation.

During 2012 and 2013, our compensation committee engaged Radford to provide advice and recommendations regarding the amount and form of executive compensation, equity incentive programs and compensation generally. During 2013, our compensation committee also engaged Radford to provide advice and recommendations regarding our director compensation program, which is discussed above under Proposal One Election of Directors Director Compensation. Radford did not provide any services to our company during 2012 or 2013 other than pursuant to its engagement by the compensation committee. Our compensation committee considered the

Table of Contents

relationship that Radford has with us, the members of our compensation committee and our executive officers, as well as the policies that Radford has in place to maintain its independence and objectivity. Based on the committee's evaluation, as well as the consideration by our executive officers of the policies that Radford has in place to maintain its independence and objectivity, the compensation committee has determined that Radford's work for the compensation committee has not raised any conflicts of interest. In reaching these conclusions, the compensation committee considered the factors set forth in Exchange Act Rule 10C-1.

As part of its engagement in 2013, Radford collected data on executive compensation from a peer group of publicly traded companies developed by the committee with Radford in July 2013. The committee selected these companies at that time in the belief that these companies had business life cycles, market capitalizations, products, research and development investment levels and number/capabilities of employees that were then comparable to ours. In working with Radford to develop the peer group, the committee and Radford generally targeted companies ranging from one-third to three times Idera's size in terms of number of employees and market capitalization, with lead drug candidates in Phase 2 or Phase 3 clinical development. In its assessment of companies with comparable market capitalization, the compensation committee assumed that all outstanding preferred stock and warrants to purchase common stock were converted into or exercised for shares of Idera's common stock. The companies included in the peer group were:

| | | |
|-----------------------------------|------------------------------|--|
| Alimera Sciences, Inc. | Athersys, Inc. | BioCryst Pharmaceuticals, Inc. |
| Biodel Inc. | Cempra, Inc. | Chelsea Therapeutics International, Ltd. |
| Concept Therapeutics Incorporated | Durata Therapeutics, Inc. | Heron Therapeutics, Inc. (formerly known as A.P. Pharma, Inc.) |
| ImmunoCellular Therapeutics, Ltd. | Inovio Pharmaceuticals, Inc. | KaloBios Pharmaceuticals, Inc. |
| NeoStem, Inc. | Neuralstem, Inc. | OncoGenex Pharmaceuticals, Inc. |
| Oncothyreon Inc. | Pozen Inc. | StemCells, Inc. |
| Targacept, Inc. | Zalicus Inc. | |

Radford provided the compensation committee with a blend of the data from the peer group and compensation survey data from the Radford Global Life Science Survey, a survey of U.S. biotech companies. We refer to this blended data as the market compensation data.

Our compensation committee intends that if we achieve our corporate goals and the executive performs at the level expected, then the executive should have the opportunity to receive compensation that is competitive with industry norms. Accordingly, our compensation committee generally targets overall compensation for executives towards the 50th percentile of the market compensation data presented by Radford. However, the compensation committee from time to time targets a different percentile for individual elements of compensation or specific individuals based on experience, performance levels and potential performance levels of the executive and changes in duties and responsibilities.

In order to accomplish its objectives consistent with its philosophy for executive compensation, our compensation committee typically takes the following actions annually:

- reviews executive officer performance;

- reviews all components of executive officer compensation, including base salary, cash bonuses, equity compensation, the dollar value to the executive and cost to us of all health and life insurance and other employee benefits and the estimated payout obligations under severance and change in control scenarios;

- seeks input from our chief executive officer on the performance of all other executive officers;

Table of Contents

consults with an independent compensation consultant;

holds executive sessions (without our management present);

reviews information regarding the performance and executive compensation of other companies; and

reviews all of the foregoing with the board of directors.

Under our annual performance review program for our executives, annual performance goals are determined for our company as a whole and for each executive individually. Annual corporate goals are proposed by management and approved by the compensation committee. These corporate goals target the achievement of specific research, clinical, operational and financial milestones.

Annual individual goals focus on contributions that facilitate the achievement of the corporate goals and are closely aligned with the corporate goals. Individual goals are proposed by each executive and approved by the chief executive officer and the compensation committee. Typically, the compensation committee sets the chief executive officer's goals and reviews and discusses with the chief executive officer the goals for all other executive officers. The individual performance goals of each named executive officer consist primarily of the key objectives and goals from our annual business plan that relate to the functional area for which the named executive officer is responsible. The individual performance goals for the chief executive officer are largely coextensive with the corporate goals.

Generally, at the end of each year, the compensation committee evaluates corporate and individual performance. The compensation committee considers the achievement of the corporate goals and individual performance as factors in determining annual salary increases, annual bonuses and annual stock option awards granted to our executives, although because of their high level of responsibility within our company, the determination of annual bonuses for our executive officers, including our named executive officers, is heavily weighted on our corporate performance. In assessing corporate performance, the committee evaluates corporate performance alongside the approved corporate goals for the year and also evaluates other aspects of corporate performance, including achievements and progress made by us outside of the corporate goals. In assessing individual performance, the compensation committee evaluates corporate performance in the areas of each officer's responsibility and relies on the chief executive officer's evaluation of each officer. The chief executive officer prepares evaluations of the other executives and in doing so compares individual performance to the individual performance goals. The chief executive officer recommends annual executive salary increases, annual stock option awards and bonuses, if any, which are then reviewed and approved by the compensation committee. In the case of the chief executive officer, the compensation committee conducts his individual performance evaluation. During this process, the compensation committee consults with its compensation consultant and, prior to approving compensation for executive officers, consults with the board of directors.

For all executives, annual base salary increases, if any, are implemented during the first calendar quarter of the year. Annual stock option awards and bonuses, if any, are granted as determined by the compensation committee, typically in the fourth quarter of the applicable year.

The compensation committee does not plan to approve annual equity grants to employees, including named executive officers, at a time when our company is in possession of material non-public information. We do not award stock options to named executive officers concurrently with the release of material non-public information.

In November 2012, in light of uncertainties with respect to our clinical development plan, results of our ongoing clinical trials and our financial condition at that time, the compensation committee determined not to conduct the compensation and performance review for our named executive officers that it generally conducts at the end of the year. Instead, the compensation committee agreed to defer such review until the results of our Phase 2 clinical trial of IMO-3100 and our Phase 1 clinical trial of IMO-8400 were known and we had sought and obtained additional financing. As a result, the compensation committee did not conduct a compensation and performance review for our named executive officers until May 2013.

Table of Contents

Elements of Executive Compensation

The compensation program for our executives generally consists of five elements based upon the foregoing objectives:

base salary;

annual cash bonuses;

stock option awards;

health care and life insurance and other employee benefits; and

severance and change in control benefits.

The value of our variable, performance-based compensation is split between short-term compensation in the form of a cash bonus and long-term compensation in the form of stock option awards that vest over time from the time of the grant of the option awards and from the time of achievement of performance milestones. The annual cash bonus is intended to provide an incentive to our executives to achieve near-term operational objectives. The stock option awards provide an incentive for our executives to achieve longer-term strategic business goals, which should lead to higher stock prices and increased stockholder value. We have not had any formal or informal policy or target for allocating compensation between long-term and short-term compensation, between cash and non-cash compensation or among the different forms of non-cash compensation. Instead, the compensation committee, after reviewing industry information and our cash resources, determines subjectively what it believes to be the appropriate level and mix of the various compensation components.

We do not have any defined benefit pension plans or any non-qualified deferred compensation plans.

We entered into a multi-year employment agreement with our chief executive officer, Sudhir Agrawal, D. Phil., in October 2005, which was amended in 2008 to comply with the requirements of Section 409A of the Internal Revenue Code of 1986, as amended, or the Code. In August 2011, we entered into an amendment to our employment offer letter with our senior vice president of operations and chief financial officer, Louis J. Arcudi, III, and in December 2011, we entered into an amended and restated employment letter with Mr. Arcudi. These agreements are described below under the caption *Agreements with our Named Executive Officers*.

Base Salary

In establishing base salaries for our executive officers, our compensation committee typically reviews the market compensation data presented by Radford, considers historic salary levels of the executive officer and the nature of the executive officer's responsibilities, compares the executive officer's base salary with those of our other executives and considers the executive officer's performance. The compensation committee also typically considers the challenges involved in hiring and retaining managerial personnel and scientific personnel with extensive experience in the chemistry of DNA and RNA and its application to toll-like receptors because of the new nature of this technology, general economic conditions and our financial condition. In assessing the executive officer's performance, the compensation committee considers the executive officer's role in the achievement of the annual corporate goals, as well as the performance evaluation prepared by our chief executive officer with respect to such executive officer. The compensation committee considers such evaluation as a means of informing the committee's decision as to whether the executive officer's performance was generally consistent with our expectations.

In November 2012, the compensation committee determined not to conduct the compensation and performance review for our named executive officers that it generally conducts at the end of the year. In May 2013, as part of the May 2013 compensation and performance review of our named executive officers, the compensation committee determined that, in light of our continuing focus on preserving our cash resources, the base salaries of our named executive officers would not be increased for 2013 and would remain at 2012 levels.

Table of Contents*Cash Bonuses*

The compensation committee generally structures cash bonuses by linking them to the achievement of the annual corporate goals, corporate performance outside of the corporate goals and individual performance. The amount of the bonus paid, if any, varies among the executive officers depending on individual performance and their contribution to the achievement of our annual corporate goals and corporate performance generally. The compensation committee reviews and assesses corporate goals and individual performance by executive officers and considers the reasons why specific goals have been achieved or have not been achieved. While achievement against the applicable corporate goals is given substantial weight in connection with the determination of annual bonuses, consideration is also given to an evaluation of our named executive officers' individual performance based on analysis of achievement of individual performance goals as well as the following subjective criteria:

leadership;

management;

judgment and decision making skills;

results orientation; and

communication.

No formula is applied to the analysis of the achievement of corporate goals or individual goals by executive officers for purposes of the committee's determination of annual cash bonuses.

The compensation committee did not set performance goals for 2013 given the fluidity of our business plans and in light of the uncertainties in the first half of 2013 with respect to our clinical development plan, results of our ongoing clinical trials and our financial condition. Instead, the compensation committee decided it would assess individual and corporate achievements as part of its annual compensation and performance review at the end of 2013. In December 2013, in light of our achievements in 2013, including the clinical development of our compounds and the financings that we conducted in 2013, the compensation committee determined to pay cash bonuses to our named executive officers for 2013. In calculating these bonuses, the compensation committee considered the market compensation data presented by Radford with respect to bonus target percentages, the role of each officer and the company's performance in 2013. The compensation committee's intention was to make the 2013 cash bonuses competitive with the 50th percentile of the market compensation data presented by Radford. As a result, in setting bonuses for 2013, Dr. Agrawal's bonus was set at 50% of his base salary, and the bonus for each of our other named executive officers was set at 30% of their base salary. The compensation committee awarded the following cash bonuses to our named executive officers for 2013:

| Named Executive Officer | 2013 Bonus |
|--------------------------------|-------------------|
| Sudhir Agrawal, D. Phil. | \$ 274,500 |
| Louis J. Arcudi, III | \$ 94,500 |
| Timothy M. Sullivan, Ph.D. | \$ 89,700 |
| Robert D. Arbeit, M.D. | \$ 90,000 |

Equity Compensation

Our equity award program is the primary vehicle for offering long-term incentives to our executive officers, including our named executive officers. We believe that equity awards provide our executives with a strong link to our long-term performance, create an ownership culture and help to align the interests of our named executive officers and our stockholders. Equity grants are intended as both a reward for contributing to the long-term success of our company and an incentive for future performance. The vesting feature of our equity awards is intended to further our goal of executive retention by providing an incentive to our named executive officers to remain in our employ during the vesting period. In determining the size of equity awards to our executives, our compensation committee considers the achievement of our annual corporate goals, individual performance, the

Table of Contents

applicable executive officer's previous awards, including the exercise price of such previous awards, the recommendations of management and the market compensation data presented by Radford.

Our equity awards have typically taken the form of stock options. However, under the terms of our stock incentive plans, we may grant equity awards other than stock options, such as restricted stock awards, stock appreciation rights and restricted stock units.

The compensation committee approves all equity awards to our executive officers. The compensation committee reviews all components of the executive officer's compensation when determining annual equity awards to ensure that an executive officer's total compensation conforms to our overall philosophy and objectives.

The compensation committee typically makes initial stock option awards to new executive officers upon commencement of their employment and annual stock option awards thereafter. Equity awards to our named executive officers are typically granted annually in conjunction with the annual performance review. This review typically occurs at the regularly scheduled meeting of the compensation committee held in the fourth quarter of each year. In general, our option awards vest over four years in 16 equal quarterly installments. The exercise price of stock options equals the fair market value of our common stock on the date of grant, which is typically equal to the closing price of our common stock on Nasdaq on the date of grant.

In May 2013, the compensation committee approved equity awards to our named executive officers in recognition of their efforts in 2012 and 2013, to incentivize future performance and to further our goals of executive retention. In determining the size of these equity awards, the compensation committee reviewed market compensation data presented by Radford and considered the value of the equity awards then held by our named executive officers. The compensation committee also considered the fact that our officers, other than Mr. Arcudi, had not received a salary increase for 2012 and would not receive a salary increase for 2013 and had not received cash bonuses for 2011 and 2012. In 2012, Mr. Arcudi's base salary increased by \$5,000 as a result of his appointment in April 2011 as our Senior Vice President of Operations. Following consideration, the compensation committee determined to grant substantially all of the number of shares of common stock remaining in the pool of shares available under our 2008 Stock Incentive Plan to our executive officers and allocated those shares to our executives based on historical practices with respect to equity distribution amongst executives. On this basis, the compensation committee granted Dr. Agrawal an option to purchase 500,000 shares of our common stock, Mr. Arcudi an option to purchase 348,333 shares of our common stock, Dr. Sullivan an option to purchase 217,750 shares of our common stock and Dr. Arbeit an option to purchase 217,750 shares of our common stock. The grant to Dr. Agrawal reflected the limit in our 2008 Stock Incentive Plan that no employee could receive options under the 2008 Stock Incentive Plan for more than 500,000 shares of our common stock in a calendar year. The compensation committee had determined that, but for such limitation, it would have granted Dr. Agrawal an option to purchase an additional 870,833 shares of our common stock. Following the adoption of our 2013 Stock Incentive Plan in July 2013, the compensation committee granted Dr. Agrawal an additional option under our 2013 Stock Incentive Plan to purchase 500,000 shares of our common stock to address the shortfall in the stock option awarded to Dr. Agrawal in May 2013 and the increase in the exercise price since May 2013. These option awards have the following time-based vesting:

40% of the shares subject to the option become exercisable on May 22, 2014, subject to the optionee's continued employment with us on such date, or, if the optionee's employment with us is terminated by us without cause prior to May 22, 2014, as of the date of such termination; and

20% of the shares subject to the option become exercisable on each of May 22, 2015, May 22, 2016 and May 22, 2017, subject to the optionee's continued employment with us on each date.

The compensation committee adopted this vesting structure in order to provide a retention incentive for executives to remain with the company for at least one year.

Table of Contents

In December 2013, as part of its annual compensation and performance review, the compensation committee reviewed the market compensation data presented by Radford regarding annual option grants. The compensation committee reviewed the equity awards previously granted in 2013 to our named executive officers, including the basis for those awards and the fact that no equity awards had been made in 2012. In determining the size of these annual option awards, the compensation committee determined to target awards at the 60th percentile of the market compensation data provided by Radford. The compensation committee considered the Company's performance in 2013, the value of options then held by executive officers and our chief executive officer's recommendations with respect to the awards to be made to the other executive officers. In addition, in comparing the percentage ownership in our company that an option grant would represent to the market compensation data that had been provided by Radford, the compensation committee also considered the impact of outstanding warrants to purchase shares of our common stock that had been issued in our public offerings in May and September 2013 and our outstanding preferred stock. On this basis, the compensation committee granted Dr. Agrawal an option to purchase 850,000 shares of our common stock, Mr. Arcudi an option to purchase 300,000 shares of our common stock, Dr. Sullivan an option to purchase 200,000 shares of our common stock and Dr. Arbeit an option to purchase 200,000 shares of our common stock. These option awards vest in equal quarterly installments over four years from the date of grant, subject to continued employment with us on each vesting date.

Benefits and Other Compensation

We maintain broad-based benefits that are provided to all employees, including health and dental insurance, life and disability insurance and a 401(k) plan. During 2013, consistent with our prior practice, we matched 50% of the employee contributions to our 401(k) plan up to a maximum of 6% of the participating employee's annual salary, resulting in a maximum company match of 3% of the participating employee's annual salary, and subject to certain additional statutory dollar limitations. Named executive officers are eligible to participate in all of our employee benefit plans, in each case on the same basis as other employees and subject to any limitations in such plans. Each of our named executive officers contributed to our 401(k) plan and their contributions were matched by us.

Our board of directors has adopted a retirement policy to address the treatment of options in the event of an employee's retirement that applies to all employees, including all officers. For purposes of this policy, an employee will be deemed to have retired if the employee terminates his or her employment with us, has been an employee of ours for more than 10 years and is older than 65 upon termination of employment. Under the policy, if an employee retires, then:

all outstanding options held by the employee will automatically vest in full; and

the period during which the employee may exercise the options will be extended to the expiration of the term of the option under the applicable option agreement.

Our board adopted this policy for our employees in recognition of the importance of stock options to the compensation of employees and in order for our employees to get the full benefit of the options held by them if he or she retires after making 10 years of contributions to our company.

We occasionally pay relocation expenses for newly hired executive officers who we require to relocate as a condition to their employment by us. We also occasionally pay local housing expenses and travel costs for executives who maintain a primary residence outside of a reasonable daily commuting range to our headquarters. We believe that these are typical benefits offered by comparable companies to executives who are asked to relocate and that we would be at a competitive disadvantage in trying to attract executives who would need to relocate in order to work for us if we did not offer such assistance. In 2013, Dr. Sullivan received reimbursement for local housing expenses because Dr. Sullivan maintains a primary residence outside of a reasonable daily commuting range to our headquarters.

Table of Contents

Our named executive officers also may participate in our employee stock purchase plan, which is generally available to all employees who work over 20 hours per week, including our executive officers, so long as they own less than 5% of our common stock, including for this purpose vested and unvested stock options. One of our named executive officers, Mr. Arcudi, participated in the employee stock purchase plan during 2013.

Severance and Change in Control Benefits

We currently have an employment agreement with Dr. Agrawal and an employment letter agreement with Mr. Arcudi under which we agreed to provide benefits in the event of the termination of their employment under specified circumstances. We have provided more detailed information about these benefits, along with estimates of their value under various circumstances, under the captions *Agreements with our Named Executive Officers* and *Potential Payments Upon Termination or Change in Control* below.

In December 2011, we entered into an amended and restated employment letter with Mr. Arcudi. In connection with this amendment and restatement, we increased the period of time following termination of employment for which he is entitled to receive severance and healthcare, disability and life insurance benefits from three months to 12 months in connection with a termination by us without cause at any time, and provided severance and healthcare, disability and life insurance benefits for 12 months in connection with termination by Mr. Arcudi for good reason upon or within 12 months after a change of control, as such terms are defined in the employment letter. The committee agreed to these provisions based in part on market compensation data from Radford.

We believe providing severance and/or change in control benefits as a component of our compensation structure can help us compete for executive talent and attract and retain highly talented executive officers whose contributions are critical to our long-term success. After reviewing the practices of companies in general industry surveys provided by Radford, we believe that our severance and change in control benefits are appropriate.

Deductibility of Executive Compensation/Internal Revenue Code Section 162(m)

Section 162(m) of the Code generally disallows a tax deduction to public companies for certain compensation in excess of \$1 million per person paid to our chief executive officer and the three other officers (other than our chief executive officer and chief financial officer) whose compensation is required to be disclosed under the Exchange Act by reason of being among our three other most highly compensated officers. Certain compensation, including qualified performance-based compensation, will not be subject to the deduction limit if specified requirements are met. The compensation committee reserves the right to use its judgment to authorize compensation payments that may be subject to the limit when the compensation committee believes such payments are appropriate and in the best interests of our company and our stockholders. There can be no assurance that compensation awarded to our executive officers will be treated as qualified performance-based compensation under Section 162(m).

Agreements with our Named Executive Officers

We have entered into agreements with certain of our named executive officers, as discussed below, that provide benefits to the executives upon their termination of employment in certain circumstances or under which we have agreed to specific compensation elements. Other than as discussed below, our named executive officers do not have employment agreements with us, other than standard employee confidentiality agreements, and are at-will employees.

Sudhir Agrawal, D. Phil.

We are a party to an employment agreement, as amended, with Dr. Agrawal, our President and Chief Executive Officer. The agreement had an initial three-year term that is automatically extended for an additional

Table of Contents

year on October 19th of each year during the term of the agreement unless either party provides prior written notice to the other that the term of the agreement is not to be extended. As a result, on each October 19th, the term of the agreement, as extended, will be three years. On October 19, 2013, the term was extended from October 19, 2015 to October 19, 2016.

Under the agreement, Dr. Agrawal is currently entitled to receive an annual base salary of \$570,960 or such higher amount as our compensation committee or our board of directors may determine. In addition, under the agreement, Dr. Agrawal is eligible to receive an annual bonus in an amount equal to between 20% and 70% of his base salary, as determined by the compensation committee or our board of directors.

If we terminate Dr. Agrawal's employment without cause or if he terminates his employment for good reason, as such terms are defined in the agreement, we have agreed to:

continue to pay Dr. Agrawal his base salary as severance for a period ending on the earlier of the final day of the term of the agreement in effect immediately prior to such termination and the second anniversary of his termination date;

pay Dr. Agrawal a lump sum cash payment equal to the pro rata portion of the annual bonus that he earned in the year preceding the year in which his termination occurs;

continue to provide Dr. Agrawal with healthcare, disability and life insurance benefits for a period ending on the earlier of the final day of the term of the agreement in effect immediately prior to the termination date and the second anniversary of the termination date, except to the extent another employer provides Dr. Agrawal with comparable benefits;

accelerate the vesting of any stock options or other equity incentive awards previously granted to Dr. Agrawal as of the termination date to the extent such options or equity incentive awards would have vested had he continued to be an employee until the final day of the term of the agreement in effect immediately prior to such termination; and

permit Dr. Agrawal to exercise any vested stock options until the second anniversary of the termination date.

If Dr. Agrawal's employment is terminated by him for good reason or by us without cause in connection with, or within one year after, a change in control, as such terms are defined in the agreement, we have agreed to provide Dr. Agrawal with all of the items listed above, except that in lieu of the severance amount described above, we will pay Dr. Agrawal a lump sum cash payment equal to his base salary multiplied by the lesser of the aggregate number of years or portion thereof remaining in his employment term and two years. We have also agreed that if we execute an agreement that provides for our company to be acquired or liquidated, or otherwise upon a change in control, all unvested stock options held by Dr. Agrawal will vest in full.

If required by Section 409A of the Code, the payments we are required to make to Dr. Agrawal for the first six months following termination of his employment under his agreement will be made as a lump sum on the date that is six months and one day following such termination.

Our employment agreement with Dr. Agrawal provides that if all or a portion of the payments made under the agreement are subject to the excise tax imposed by Section 4999 of the Code, or a similar state tax or assessment, we will pay him an amount necessary to place him in the same after-tax position as he would have been had no excise tax or assessment been imposed. Any amounts paid pursuant to the preceding sentence will also be increased to the extent necessary to pay income and excise tax on those additional amounts.

In the event of Dr. Agrawal's death or the termination of his employment due to disability, we have agreed to pay Dr. Agrawal or his beneficiary a lump sum cash payment equal to the pro rata portion of the annual bonus that he earned in the year preceding his death or termination due to disability. Additionally, any stock options or

Table of Contents

other equity incentive awards previously granted to Dr. Agrawal and held by him on the date of his death or termination due to disability will vest as of such date to the extent such options or equity incentive awards would have vested had he continued to be an employee until the final day of the term of the employment agreement in effect immediately prior to his death or termination due to disability. Dr. Agrawal or his beneficiary will be permitted to exercise such stock options until the second anniversary of his death or termination of employment due to disability.

Dr. Agrawal has agreed that during his employment with us and for a one-year period thereafter, he will not hire or attempt to hire any of our employees or compete with us.

Louis J. Arcudi, III

We are a party to an employment letter with Mr. Arcudi, our Senior Vice President of Operations, Chief Financial Officer, Treasurer and Secretary. If we terminate Mr. Arcudi's employment without cause at any time, or if he terminates his employment for good reason upon a change in control or within one year after a change of control, as such terms are defined in the agreement, we have agreed to:

continue to pay Mr. Arcudi his base salary as severance for 12 months following such termination payable in accordance with our then current payroll practices; and

continue to provide Mr. Arcudi with healthcare, disability and life insurance benefits for 12 months following such termination, except to the extent another employer provides Mr. Arcudi with comparable benefits.

Our agreement to pay severance and benefits is subject to Mr. Arcudi's entering into a separation and release agreement.

If required by Section 409A of the Code, the payments we are required to make to Mr. Arcudi in the first six months following the termination of his employment under his agreement will be made as a lump sum on the date that is six months and one day following such termination.

Compensation Committee Report

The compensation committee has reviewed and discussed the Compensation Discussion and Analysis required by Item 402(b) of Regulation S-K with our management. Based on this review and discussion, the compensation committee recommended to our board of directors that the Compensation Discussion and Analysis be included in this proxy statement.

By the compensation committee of the board of directors,

Malcolm MacCoss, Chairman

Youssef El Zein

Eve E. Slater

Table of Contents**Summary Compensation Table**

The table below summarizes compensation paid to or earned by our named executive officers. Our named executive officers have no stock awards, defined benefit pension or non-qualified compensation to report for 2013, 2012 and 2011.

Summary Compensation Table for Fiscal Year 2013

| Name and Principal Position | Year | Salary (\$) | Bonus (\$) | Option Awards \$(1) | All Other Compensation \$(2) | Total (\$) |
|---|------|-------------|------------|---------------------------|------------------------------------|--------------|
| Sudhir Agrawal, D. Phil., President and Chief Executive Officer | 2013 | \$ 549,000 | \$ 274,500 | \$ 1,875,425 | \$ 31,589 | \$ 2,730,514 |
| | 2012 | \$ 549,000 | \$ | \$ 24,019 | \$ 75,447 | \$ 648,466 |
| | 2011 | \$ 549,000 | \$ | \$ 334,500 | \$ 30,606 | \$ 914,156 |
| Louis J. Arcudi, III Senior Vice President of Operations, Chief Financial Officer, Treasurer and Secretary | 2013 | \$ 315,000 | \$ 94,500 | \$ 581,957 | \$ 31,033 | \$ 1,022,490 |
| | 2012 | \$ 315,000 | \$ | \$ | \$ 43,523 | \$ 358,523 |
| | 2011 | \$ 310,000 | \$ | \$ 133,820 | \$ 30,135 | \$ 473,955 |
| Timothy M. Sullivan, Ph. D. Vice President, Development Programs and Alliance Management | 2013 | \$ 299,000 | \$ 89,700 | \$ 382,819 | \$ 48,284 | \$ 819,803 |
| | 2012 | \$ 299,000 | \$ | \$ | \$ 49,877 | \$ 348,877 |
| | 2011 | \$ 299,000 | \$ | \$ 100,365 | \$ 46,978 | \$ 446,343 |
| Robert D. Arbeit, M.D. Vice President, Clinical Development | 2013 | \$ 300,000 | \$ 90,000 | \$ 382,819 | \$ 11,801 | \$ 784,620 |
| | 2012 | \$ 300,000 | \$ | \$ | \$ 11,968 | \$ 311,968 |
| | 2011 | \$ 300,000 | \$ | \$ 100,365 | \$ 11,913 | \$ 412,278 |

- (1) Represents the aggregate grant date fair value of options granted to each of the named executive officers as computed in accordance with ASC 718. These amounts do not represent the actual amounts paid to or realized by the named executive officers. See Note 2(j) to the financial statements in our annual report on Form 10-K for the year ended December 31, 2013 regarding assumptions we made in determining the fair value of option awards.
- (2) All Other Compensation for 2013 for each of the named executive officers includes the following:

| | Dr. Agrawal | Mr. Arcudi | Dr. Sullivan | Dr. Arbeit |
|---|-------------|------------|--------------|------------|
| Premiums paid by us for all insurance plans | \$ 23,939 | \$ 23,383 | \$ 23,235 | \$ 4,151 |
| Company match on 401(k) | \$ 7,650 | \$ 7,650 | \$ 7,650 | \$ 7,650 |
| Reimbursement for housing expenses | | | \$ 17,399 | |

See Compensation Discussion and Analysis above for a discussion of annual cash bonuses and the amount of salary and bonus in proportion to total compensation.

Table of Contents**Grants of Plan-Based Awards**

The following table sets forth information regarding stock options granted to our named executive officers during 2013.

Grants of Plan-Based Awards for Fiscal Year 2013

| Name | Grant Date | All Other Option Awards: Number of Securities Underlying Options (#)(1) | Exercise or Base Price of Option Awards (\$/Sh) | Grant Date Fair Value of Option Awards \$(2) |
|----------------------------|---------------|---|---|--|
| Sudhir Agrawal, D. Phil. | 5/22/2013(3) | 500,000 | \$ 0.69 | \$ 178,000 |
| | 8/16/2013(4) | 500,000 | \$ 1.50 | \$ 399,900 |
| | 12/10/2013(4) | 850,000 | \$ 2.56 | \$ 1,297,525 |
| Louis J. Arcudi, III | 5/22/2013(3) | 348,333 | \$ 0.69 | \$ 124,007 |
| | 12/10/2013(4) | 300,000 | \$ 2.56 | \$ 457,950 |
| Timothy M. Sullivan, Ph.D. | 5/22/2013(3) | 217,750 | \$ 0.69 | \$ 77,519 |
| | 12/10/2013(4) | 200,000 | \$ 2.56 | \$ 305,300 |
| Robert D. Arbeit, M.D. | 5/22/2013(3) | 217,750 | \$ 0.69 | \$ 77,519 |
| | 12/10/2013(4) | 200,000 | \$ 2.56 | \$ 305,300 |

- (1) The term of these options is ten years. The vesting of these stock options is time-based. See Compensation Discussion and Analysis Elements of Executive Compensation Equity Compensation for a full description of the vesting terms for these options. See Agreements with our Named Executive Officers for further information about acceleration of vesting of Dr. Agrawal's options in the event of the termination of his employment and/or a change of control.
- (2) Represents the aggregate grant date fair value of option awards made to the named executive officers in 2013 as computed in accordance with ASC 718. These amounts do not represent the actual amounts paid to or realized by the named executive officers during 2013. See Note 2(j) to the financial statements in our annual report on Form 10-K for the year ended December 31, 2013 regarding assumptions we made in determining the fair value of option awards.
- (3) Granted pursuant to our 2008 Stock Incentive Plan.
- (4) Granted pursuant to our 2013 Stock Incentive Plan.

Table of Contents**Outstanding Equity Awards at Fiscal Year-End**

The following table sets forth information regarding the outstanding stock options held by our named executive officers as of December 31, 2013. None of our named executive officers held shares of unvested restricted stock as of December 31, 2013.

Outstanding Equity Awards at Fiscal Year-End for 2013

| Name | Number of Securities Underlying Unexercised Options (#) Exercisable | Number of Securities Underlying Unexercised Options (#) Unexercisable | Option Exercise Price (\$) | Option Expiration Date |
|-----------------------------|--|--|-----------------------------------|-------------------------------|
| Sudhir Agrawal, D. Phil.(1) | 31,250 | | \$ 4.16 | 11/30/2014 |
| | 125,000 | | \$ 4.48 | 5/12/2015 |
| | 50,000 | | \$ 5.76 | 6/1/2015 |
| | 37,500 | | \$ 4.24 | 12/15/2015 |
| | 125,000 | | \$ 5.10 | 12/14/2016 |
| | 62,500 | | \$ 7.05 | 6/25/2017 |
| | 125,000 | | \$ 13.28 | 1/2/2018 |
| | 200,000 | | \$ 8.70 | 12/16/2018 |
| | 300,000 | | \$ 5.24 | 12/23/2019 |
| | 173,250(2) | 57,750(2) | \$ 2.74 | 12/27/2020 |
| | 244,998(3) | 120,002(3) | \$ 1.157 | 11/28/2021 |
| | 17,151(3) | 8,400(3) | \$ 1.16 | 11/28/2021 |
| | | 500,000(4) | \$ 0.69 | 5/22/2023 |
| | 500,000(4) | \$ 1.50 | 8/16/2023 | |
| | 850,000(5) | \$ 2.56 | 12/10/2023 | |
| Louis J. Arcudi, III | 80,000 | | \$ 12.25 | 12/3/2017 |
| | 40,000 | | \$ 8.70 | 12/16/2018 |
| | 110,000 | | \$ 5.24 | 12/23/2019 |
| | 71,250(2) | 23,750(2) | \$ 2.74 | 12/27/2020 |
| | 98,000(3) | 48,000(3) | \$ 1.157 | 11/28/2021 |
| | | 348,333(4) | \$ 0.69 | 5/22/2023 |
| | 300,000(5) | \$ 2.56 | 12/10/2023 | |
| Timothy M. Sullivan, Ph.D. | 58,750 | | \$ 4.16 | 11/30/2014 |
| | 12,500 | | \$ 4.24 | 12/15/2015 |
| | 20,000 | | \$ 5.10 | 12/14/2016 |
| | 25,000 | | \$ 13.28 | 1/2/2018 |
| | 35,000 | | \$ 8.70 | 12/16/2018 |
| | 70,000 | | \$ 5.24 | 12/23/2019 |
| | 54,375(2) | 18,125(2) | \$ 2.74 | 12/27/2020 |
| | 73,499(3) | 36,001(3) | \$ 1.157 | 11/28/2021 |
| | | 217,750(4) | \$ 0.69 | 5/22/2023 |
| | 200,000(5) | \$ 2.56 | 12/10/2023 | |
| Robert D. Arbeit, M.D. | 40,000 | | \$ 6.43 | 8/3/2019 |
| | 17,000 | | \$ 5.24 | 12/23/2019 |
| | 54,375(2) | 18,125(2) | \$ 2.74 | 12/27/2020 |
| | 73,499(3) | 36,001(3) | \$ 1.157 | 11/28/2021 |
| | | 217,750(4) | \$ 0.69 | 5/22/2023 |
| | | 200,000(5) | \$ 2.56 | 12/10/2023 |

Table of Contents

- (1) See Agreements with our Named Executive Officers for further information about acceleration of vesting of Dr. Agrawal's options in the event of the termination of his employment and/or a change of control.
- (2) 6.25% of the shares subject to this option vest quarterly from the date of grant until December 27, 2014 when all shares will be vested. The total number of shares subject to the option equals the sum of the figures in the exercisable and unexercisable columns.
- (3) The shares subject to this option vest as follows:

25% of the shares vest over four years in 16 equal quarterly installments with the first installment vesting February 28, 2012;

25% of the shares vested on November 28, 2012;

50% of the shares were scheduled to vest upon the achievement of specified performance milestones with 25% of the number of shares corresponding to a particular performance milestone vesting upon achievement of the performance milestone and the balance of such shares vesting in three equal installments on the first, second and third anniversaries of the achievement of such milestone; and

100% of the unexercisable shares subject to the option vest if, upon or within 12 months after a change in control of our company, the named executive officer's employment is terminated by us without cause or the named executive officer terminates his employment for good reason.

The period for performance of the specified performance milestones expired in June 2013. As of such expiration 46% of the shares subject to performance based vesting had begun vesting as a result of the achievement of specified performance milestones, and the remaining 54% of the shares subject to performance based vesting had expired. The total number of shares subject to the option equals the sum of the figures in the exercisable and unexercisable columns.

- (4) The shares subject to this option vest as follows:

40% of the shares subject to the option become exercisable on the first anniversary of the date of grant or, if the optionee's employment with us is terminated by us without cause prior to the first anniversary of the date of grant, as of the date of such termination; and

20% of the shares subject to the option become exercisable on each of the second, third and fourth anniversaries of the date of grant.

- (5) 6.25% of the shares subject to this option vest quarterly from the date of grant until December 10, 2017 when all shares will be vested.

Option Exercises and Stock Vested

None of our named executive officers exercised any options during the year ended December 31, 2013.

Potential Payments Upon Termination or Change in Control

We have an employment agreement with Dr. Agrawal that provides for severance benefits and acceleration of vesting of equity awards following a termination of his employment with our company. Additionally, Mr. Arcudi's employment offer letter provides for severance benefits in certain circumstances. These agreements are described above under the caption Agreements with our Named Executive Officers. Neither Dr. Sullivan nor Dr. Arbeit is entitled to any severance benefits following a termination of his employment with our company. Each of our named executive officers is entitled to acceleration of vesting in connection with a termination of employment upon or within one year after a change in control for the options the compensation committee granted in November 2011, effective December 5, 2011 and January 3, 2012.

Table of Contents*Termination of Employment Not In Connection With or Following a Change in Control*

The following table sets forth the estimated potential benefits that our named executive officers would be entitled to receive upon their termination of employment with our company (other than a termination in connection with or following a change in control of our company) if the named executive officers' employment terminated on December 31, 2013. This table represents estimates only and does not necessarily reflect the actual amounts that would be paid to our named executive officers, which would only be known at the time that they become eligible for payment following their termination.

Termination of Employment Not In Connection With or Following a Change in Control

| Name | Severance Payments (\$) | Bonus Amount (\$) | Value of Accelerated Vesting of Stock Options \$(1) | Value of Continuation of Benefits \$(2) | Total (\$) |
|-----------------------------|-------------------------------|-------------------------|---|--|---------------|
| Sudhir Agrawal, D. Phil.(3) | \$ 1,098,000 | | \$ 4,603,436 | \$ 48,647 | \$ 5,750,083 |
| Louis J. Arcudi, III(4) | \$ 315,000 | | \$ 548,972 | \$ 23,727 | \$ 887,699 |
| Timothy M. Sullivan, Ph.D. | | | \$ 343,174 | | \$ 343,174 |
| Robert D. Arbeit, M.D. | | | \$ 343,174 | | \$ 343,174 |

- (1) Calculated by multiplying the number of shares subject to options for which vesting would be accelerated by the difference between \$4.63, the closing price of our common stock on December 31, 2013, and the per share exercise prices for such options.
- (2) This amount represents the estimated cost to us of continuing the named executive officer's healthcare, disability, life and dental insurance benefits for the full severance period applicable to such named executive officer based on our costs for such benefits at December 31, 2013.
- (3) Following the termination of Dr. Agrawal's employment by him for good reason or by us other than for death, disability or cause, Dr. Agrawal will be entitled to severance payments, a pro rata portion of his bonus for the prior year, if any, benefits continuation and acceleration of vesting of his equity awards to the extent such options or equity incentive awards would have vested had he continued to be an employee until the final day of the term of the agreement in effect immediately prior to such termination. Upon termination of Dr. Agrawal's employment due to death or disability, we have agreed to pay a pro rata portion of his bonus for the prior year and to accelerate the vesting of his equity awards to the extent such options or equity incentive awards would have vested had he continued to be an employee until the final day of the term of the agreement in effect immediately prior to such termination. See Agreements with our Named Executive Officers for further information about acceleration of vesting and severance payments in such circumstances.
- (4) Severance payments and benefits continuation will only be paid to Mr. Arcudi following termination by us without cause. See Agreements with our Named Executive Officers for further information about our agreement with Mr. Arcudi.

Table of Contents*Termination of Employment In Connection With or Following a Change in Control*

The following table sets forth the estimated potential benefits that our named executive officers would be entitled to receive upon their termination of employment with our company in connection with or following a change in control of our company if the change of control occurred on December 31, 2013 and the named executive officer's employment was immediately terminated and an estimate regarding any gross-up payments for certain taxes in the event that any payments made in connection with a change in control of our company would be subject to excise tax imposed by Section 4999 of the Code. This table represents estimates only and does not necessarily reflect the actual amounts that would be paid to our named executive officers, which would only be known at the time that they become eligible for payment following their termination.

Termination of Employment In Connection With or Following a Change in Control

| Name | Severance Payments (\$) | Bonus Amount (\$) | Value of Accelerated Vesting of Stock Options (\$)(1) | Value of Continuation of Benefits (\$)(2) | Tax Gross-Up Payments (\$) | Total (\$) |
|-----------------------------|--|----------------------------------|--|--|---|-----------------------|
| Sudhir Agrawal, D. Phil.(3) | \$ 1,098,000 | | \$ 5,859,543 | \$ 48,647 | \$ 1,159,110 | \$ 8,165,300 |
| Louis J. Arcudi, III(4) | \$ 315,000 | | \$ 715,676 | \$ 23,727 | | \$ 1,054,403 |
| Timothy M. Sullivan, Ph.D. | | | \$ 468,205 | | | \$ 468,205 |
| Robert D. Arbeit, M.D. | | | \$ 468,205 | | | \$ 468,205 |

- (1) Calculated by multiplying the number of shares subject to options for which vesting would be accelerated by the difference between \$4.63, the closing price of our common stock on December 31, 2013, and the per share exercise prices for such options.
- (2) Represents the estimated cost to us of continuing the named executive officers' healthcare, disability, life and dental insurance benefits for the applicable severance period based on our costs for such benefits at December 31, 2013.
- (3) Following the termination of Dr. Agrawal's employment in connection with or following a change in control by him for good reason or by us other than for death, disability or cause, Dr. Agrawal will be entitled to a lump sum severance payment, a pro rata portion of his bonus for the prior year, benefits continuation and full acceleration of vesting of his option awards. See Agreements with our Named Executive Officers for further information about acceleration of vesting and severance payments in such circumstances.
- (4) Following the termination of Mr. Arcudi's employment in connection with or following a change in control by him for good reason or by us other than for death, disability or cause, Mr. Arcudi will be entitled to severance payments of his then current base salary and benefits continuation for a twelve-month period, payable in accordance with and at the times contemplated by our then current payroll practices.

Table of Contents**EQUITY COMPENSATION PLAN INFORMATION**

The following table provides information about our common stock that may be issued upon exercise of options and warrants under all of our equity compensation plans as of December 31, 2013.

| Plan Category | Number of Securities to be Issued Upon Exercise of Outstanding Options and Warrants (a) | Weighted-Average Exercise Price of Outstanding Options and Warrants (b) | Number of Securities Remaining Available For Future Issuance Under Equity Compensation Plans (Excluding Securities Reflected in Column (a)) (c) |
|--|--|--|--|
| Equity compensation plans approved by stockholders(1) | 10,150,019 | \$ 3.38 | 1,617,588 |
| Equity compensation plans not approved by stockholders | | | |
| Total | 10,150,019 | \$ 3.38 | 1,617,588 |

(1) Consists of our:

1995 Employee Stock Purchase Plan;

1995 Director Stock Option Plan;

1997 Stock Incentive Plan;

2005 Stock Incentive Plan;

2008 Stock Incentive Plan; and

2013 Stock Incentive Plan.

Shares are available for future issuance only under our 1995 Employee Stock Purchase Plan and our 2013 Stock Incentive Plan.

Table of Contents

PROPOSAL TWO

APPROVAL, BY NON-BINDING VOTE, OF EXECUTIVE COMPENSATION

We are providing our stockholders the opportunity to vote to approve, on an advisory, non-binding basis, the compensation of our named executive officers as disclosed in this proxy statement in accordance with the SEC's rules. This proposal, which is commonly referred to as "say-on-pay," is required by the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010, which added Section 14A to the Exchange Act. Consistent with the preference expressed by our stockholders at our 2011 annual meeting of stockholders, we have determined to hold an advisory vote on executive compensation annually.

The compensation committee of our board of directors seeks to achieve the following broad goals in connection with our executive compensation programs and decisions regarding individual compensation:

attract, retain and motivate the best possible executive talent;

ensure executive compensation is aligned with our corporate strategies and business objectives, including our short-term operating goals and longer-term strategic objectives;

promote the achievement of key strategic and financial performance measures by linking short- and long-term cash and equity incentives to the achievement of measurable corporate and individual performance goals; and

align executives' incentives with the creation of stockholder value.

Our compensation program for our executives generally consists of five elements based upon the foregoing objectives:

base salary;

annual cash bonuses;

stock option awards;

health care, life insurance and other employee benefits; and

severance and change in control benefits.

The value of our variable, performance-based compensation is split between short-term compensation in the form of a cash bonus and long-term compensation in the form of stock option awards that vest over time from the time of the grant of the option awards and from the time of achievement of performance milestones. The annual cash bonus is intended to provide an incentive to our executives to achieve near-term operational objectives. The stock option awards provide an incentive for our executives to achieve longer-term strategic business goals, which should lead to higher stock prices and increased stockholder value.

The "Executive Compensation" section set forth elsewhere in this proxy statement, including "Compensation Discussion and Analysis," describes in detail our executive compensation programs and the decisions made by the compensation committee and the board of directors with respect to the fiscal year ended December 31, 2013.

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Our board of directors is asking stockholders to approve a non-binding advisory vote on the following resolution:

RESOLVED, that the compensation paid to the company's named executive officers, as disclosed pursuant to the compensation disclosure rules of the Securities and Exchange Commission, including the compensation discussion and analysis, the compensation tables and any related material disclosed in this proxy statement, is hereby approved.

- 39 -

Table of Contents

As an advisory vote, this proposal is not binding. The outcome of this advisory vote will not overrule any decision by us or our board of directors (or any committee thereof), create or imply any change to our fiduciary duties or the fiduciary duties of our board of directors (or any committee thereof), or create or imply any additional fiduciary duties on us or our board of directors (or any committee thereof). However, our compensation committee and board of directors value the opinions expressed by our stockholders in their vote on this proposal and will consider the outcome of the vote when making future compensation decisions for named executive officers.

Recommendation of the Board of Directors

Our board of directors recommends that stockholders vote to approve the compensation of our named executive officers by voting FOR this proposal.

- 40 -

Table of Contents**PROPOSAL THREE****AMENDMENT OF 2013 STOCK INCENTIVE PLAN**

Our 2013 Stock Incentive Plan was adopted by our board of directors in May 2013 and was approved by our stockholders in July 2013. In April 2014, the board of directors adopted an amendment to the 2013 Stock Incentive Plan, subject to stockholder approval, to increase the number of shares authorized to be issued pursuant to awards granted under the 2013 Stock Incentive Plan by 6,000,000 shares. If such amendment is approved, the total number of shares authorized to be issued pursuant to awards granted under the 2013 Stock Incentive Plan would be increased from an aggregate of 4,224,460 shares of common stock plus such additional number of shares of common stock (up to 5,720,540 shares) as is equal to the number of shares of common stock subject to awards granted under our 2008 Stock Incentive Plan which awards expire, terminate or are otherwise surrendered, cancelled, forfeited or repurchased by us at their original issuance price pursuant to a contractual repurchase right, to an aggregate of up to 10,224,460 shares of common stock plus such additional number of shares of common stock (up to 5,720,540 shares) as is equal to the number of shares of common stock subject to awards granted under the 2008 Stock Incentive Plan which awards expire, terminate or are otherwise surrendered, cancelled, forfeited or repurchased by us at their original issuance price pursuant to a contractual repurchase right.

As of March 31, 2014, options to purchase 3,695,000 shares of common stock were outstanding under the 2013 Stock Incentive Plan, 7,716 shares had been issued to non-employee directors in lieu of the payment of cash board fees, and an additional 784,195 shares were available for issuance pursuant to future awards under the 2013 Stock Incentive Plan. In consideration of the limited number of shares remaining available for issuance under the 2013 Stock Incentive Plan and our need for equity compensation to maintain a competitive position in attracting, retaining and motivating key personnel, our board of directors adopted the amendment. In calculating the size of the increase in the authorized number of shares issuable under the 2013 Stock Incentive Plan, our board of directors considered, among other things, our hiring plans and expected number of employees, our historic share usage under our stock incentive plans, our current overhang in shares issuable upon exercise of outstanding awards granted under our stock incentive plans, the existing terms of such outstanding awards and assumptions regarding stock option exercise activity and forfeiture rates. If stockholders approve the amendment to the 2013 Stock Incentive Plan, we will have an additional 6,000,000 shares of common stock available for future issuance under the 2013 Stock Incentive Plan.

The only equity compensation plans from which we may issue shares are our 1995 Employee Stock Purchase Plan and our 2013 Stock Incentive Plan. The following table summarizes information regarding all of our outstanding equity awards under all of our equity compensation plans and shares available for future awards under all of our equity plans as of March 31, 2014.

| | March 31, 2014* |
|---|------------------------|
| Total shares of common stock underlying all outstanding options | 10,521,416 |
| Weighted-average exercise price of outstanding options | \$ 3.62 |
| Weighted-average remaining contractual life of outstanding options (in years) | 7.48 |
| Total shares available for future awards | 784,195 |

* Excludes shares available through our 1995 Employee Stock Purchase Plan.

Recommendation of the Board of Directors

Our board of directors recommends that stockholders vote to approve the amendment to our 2013 Stock Incentive Plan to increase the number of shares authorized for issuance thereunder by voting FOR this proposal.

Table of Contents

Summary of the 2013 Stock Incentive Plan

The following summary of the 2013 Stock Incentive Plan is qualified in its entirety by reference to the 2013 Stock Incentive Plan. References to the board of directors in this summary shall include the compensation committee of the board of directors or any similar committee appointed by the board of directors to administer the 2013 Stock Incentive Plan.

Types of Awards; Shares Available for Issuance

The 2013 Stock Incentive Plan allows for the issuance of incentive stock options intended to qualify under Section 422 of the Code, nonstatutory stock options, stock appreciation rights, restricted stock awards, restricted stock units, other stock-based awards and performance awards. We refer to these securities as Awards. Subject to adjustment in the event of stock splits, stock dividends or similar events, and assuming this proposal is approved by our stockholders, Awards may be made under the 2013 Stock Incentive Plan for up to 10,224,460 shares of our common stock plus such additional number of shares of common stock (up to 5,720,540 shares) as is equal to the number of shares of common stock subject to awards granted under the 2008 Stock Incentive Plan which awards expire, terminate or are otherwise surrendered, cancelled, forfeited or repurchased by us at their original issuance price pursuant to a contractual repurchase right (subject, however, in the case of incentive stock options to any limitations under the Code). In addition, if any Award granted under the 2013 Stock Incentive Plan expires or is terminated, surrendered, cancelled, forfeited or otherwise results in any common stock not being issued, the unused common stock covered by such Award shall again be available for the grant of Awards under the 2013 Stock Incentive Plan (subject, in the case of incentive stock options, to any limitations under the Code). However, shares of common stock delivered to us by a participant to purchase common stock upon exercise of an Award or to satisfy tax withholding obligations (including shares retained from the Award creating the tax obligation) shall not be added back to the number of shares of common stock available for the future grant of Awards under the 2013 Stock Incentive Plan. In addition, common stock repurchased by us on the open market using proceeds from the exercise of an Award shall not increase the number of shares of common stock available for future grant of Awards under the 2013 Stock Incentive Plan.

Certain sub-limitations apply to the shares available for issuance under the 2013 Stock Incentive Plan. The maximum number of shares with respect to which Awards may be granted to any participant under the 2013 Stock Incentive Plan is 1,500,000 shares per calendar year. The maximum number of shares with respect to which Awards may be granted to directors who are not employees of Idera at the time of grant shall be 20% of the maximum number of authorized shares under the 2013 Stock Incentive Plan. Performance Awards can also provide for cash payments of up to a maximum of \$1,500,000 per fiscal year per individual.

All shares of common stock covered by stock appreciation rights, if any, shall be counted against the number of shares available for grant under the 2013 Stock Incentive Plan and the sub-limitations on Awards to non-employee directors. However, stock appreciation rights that may be settled only in cash shall not be so counted, and if a stock appreciation right is granted in tandem with an option for the same number of shares of common stock and the grant provides that only one such Award may be exercised, or tandem SAR, only the shares covered by the option shall be counted, and the expiration of one in connection with the other's exercise will not restore shares to the 2013 Stock Incentive Plan. The shares covered by a tandem SAR will not again become available for grant under the 2013 Stock Incentive Plan upon the expiration or termination of the tandem SAR. In the case of the exercise of a stock appreciation right, the number of shares counted against the shares available under the 2013 Stock Incentive Plan and the sub-limitation on Awards to non-employee directors shall be the full number of shares subject to the stock appreciation right multiplied by the percentage of the stock appreciation right actually exercised, regardless of the number of shares actually used to settle the stock appreciation right upon exercise.

Subject to adjustment in the event of changes in capitalization and reorganization events (as defined below), any Award granted under the 2013 Stock Incentive Plan that is not a full-value award shall be counted against

Table of Contents

the number of shares available for grant under the 2013 Stock Incentive Plan and the sub-limitation on Awards to non-employee directors as one share for each share of common stock subject to such Award, and any Award that is a full-value award shall be counted as 1.25 shares for each share of common stock subject to such Award. Full-value award means any Award of restricted stock or restricted stock units or any other stock-based Award with a per share price or per unit purchase price lower than 100% of the fair market value of our common stock on the date of grant. To the extent a share that was subject to an Award that counted as one share is returned to the plan as described above, each applicable share reserve will be credited with one share, and to the extent a share that was subject to an Award that counted as 1.25 shares is returned to the plan as described above, each applicable share reserve will be credited with 1.25 shares.

In connection with a merger or consolidation of an entity with us or our acquisition of property or stock of an entity, our board of directors may grant Awards under the 2013 Stock Incentive Plan in substitution for an option or other stock or stock-based Awards granted by such entity or an affiliate thereof on such terms as our board of directors determines appropriate in the circumstances, notwithstanding any limitation on Awards contained in the 2013 Stock Incentive Plan. Substitute Awards granted under the 2013 Stock Incentive Plan in connection with a merger or consolidation of an entity with Idera or the acquisition by Idera of property or stock of an entity shall not count against the overall share limits and sub-limitations described above, except as required by reason of Section 422 and related provisions of the Code.

Shares issued under the 2013 Stock Incentive Plan may consist in whole or in part of authorized but unissued shares or treasury shares.

Descriptions of Awards

Options. Optionees receive the right to purchase a specified number of shares of common stock at a specified option price and subject to such other terms and conditions as are specified in connection with the option grant. Options may not be granted at an exercise price that is less than 100% of the fair market value of the common stock on the effective date of grant; provided, however, that if our board of directors approves the grant of an option with an exercise price to be determined on a future date, the exercise price may not be less than 100% of the fair market value of the common stock on such future date. Under present law, incentive stock options may not be granted at an exercise price less than 110% of the fair market value in the case of stock options granted to optionees holding more than 10% of the total combined voting power of all classes of our stock. Under the terms of the 2013 Stock Incentive Plan, stock options may not be granted for a term in excess of 10 years (and, under present law, five years in the case of incentive stock options granted to optionees holding greater than 10% of the total combined voting power of all classes of our stock). Any or all of the Awards available under the 2013 Stock Incentive Plan may be in the form of incentive stock options. The 2013 Stock Incentive Plan permits participants to pay the exercise price of options using one or more of the following manners of payment: (i) payment by cash, check or wire transfer, or, except as may otherwise be provided in the applicable option agreement or approved by our board of directors, in connection with a cashless exercise through a broker, (ii) to the extent provided in the applicable option agreement or approved by our board of directors, and subject to certain conditions, by surrender to us of shares of common stock owned by the participant valued at their fair market value, (iii) to the extent provided in an applicable nonstatutory stock option agreement or approved by our board of directors, and subject to certain conditions, by delivery of a notice of net exercise as a result of which we will retain a number of shares of common stock otherwise issuable pursuant to the stock option equal to the aggregate exercise price for the portion of the option being exercised divided by the fair market value of our common stock on the date of exercise, (iv) to the extent provided in the applicable option agreement or approved by our board of directors, by any other lawful means, or (v) any combination of the foregoing.

Stock Appreciation Rights. A stock appreciation right, or SAR, is an award entitling the holder, upon exercise, to receive a number of shares of common stock or cash (or a combination thereof) determined by reference to appreciation, from and after the date of grant, in the fair market value of a share of our common

Table of Contents

stock over the measurement price. SARs may be granted independently or in tandem with stock options granted under the 2013 Stock Incentive Plan. When a SAR is granted in tandem with a stock option, the SAR will be exercisable only at such time or times, and to the extent, that the related stock option is exercisable (except to the extent designated by our board of directors in connection with reorganization event), will terminate and no longer be exercisable upon the termination or exercise of the related option (except to the extent designated by our board of directors in connection with a reorganization event), and will be transferable only with the related stock option. The related stock option will terminate and no longer be exercisable upon the exercise of the SAR. The 2013 Stock Incentive Plan provides that the measurement price of an SAR may not be less than 100% of the fair market value of our common stock on the effective date of grant (provided, however, that if our board of directors approves the grant of a SAR effective as of a future date, the measurement price shall not be less than 100% of the fair market value on such future date) and that SARs granted under the 2013 Stock Incentive Plan may not have a term in excess of 10 years.

Limitation on Repricing of Options or SARs; Other Limitations. With respect to options and SARs, unless such action is approved by stockholders or permitted under the terms of the 2013 Stock Incentive Plan in connection with certain changes in capitalization and reorganization events, we may not (i) amend any outstanding option or SAR granted under the 2013 Stock Incentive Plan to provide an exercise price or measurement price per share that is lower than the then-current exercise price or measurement price per share of such outstanding option or SAR, (ii) cancel any outstanding option or SAR (whether or not granted under the 2013 Stock Incentive Plan) and grant in substitution therefor new Awards under the 2013 Stock Incentive Plan (other than certain Awards granted in connection with our merger or consolidation with, or acquisition of, another entity, covering the same or a different number of shares of common stock and having an exercise price or measurement price per share lower than the then-current exercise price or measurement price per share of the cancelled option or SAR, (iii) cancel in exchange for a cash payment any outstanding option or SAR with an exercise price or measurement price per share above the then-current fair market value of our common stock, or (iv) take any other action under the 2013 Stock Incentive Plan that constitutes a repricing within the meaning of the rules of the Nasdaq Stock Market. No option or SAR granted under the 2013 Stock Incentive Plan shall contain any provision entitling the grantee to the automatic grant of additional options or SARs in connection with any exercise of the original option or SAR or provide for the payment or accrual of dividend equivalents.

Restricted Stock Awards. We may issue Awards entitling recipients to acquire shares of our common stock subject to our right to repurchase all or part of such shares at their issue price or other stated or formula price (or to require forfeiture of such shares if issued at no cost) from the recipient in the event that conditions specified by the board of directors in the applicable Award are not satisfied prior to the end of the applicable restriction period established for such Award. We refer to these Awards as Restricted Stock. Unless otherwise provided in the applicable Award agreement, any dividend declared and paid by us with respect to a share of Restricted Stock shall be paid to the participant (without interest) only if and when such shares of Restricted Stock become free from any applicable restrictions on transferability and forfeitability.

Restricted Stock Units. We may also grant Awards entitling the recipient to receive shares of our common stock (or cash equal to the fair market value of such shares) to be delivered at the time such Award vests. We refer to these Awards as Restricted Stock Units. Our board of directors may, in its discretion, provide that settlement of Restricted Stock Units shall be deferred, on a mandatory basis or at the election of the participant in a manner that complies with Section 409A of the Code. A participant has no voting rights with respect to any Restricted Stock Units. A grant of Restricted Stock Units may provide the participant with a right to receive dividend equivalents, which shall be subject to the same restrictions on transfer and forfeitability as the underlying Restricted Stock Units. Dividend equivalents with respect to Restricted Stock Units will be subject to the same restrictions on transfer and forfeitability as the underlying Restricted Stock Unit Award.

Other Stock-Based Awards. Under the 2013 Stock Incentive Plan, our board of directors may grant other Awards that are valued in whole or in part by reference to, or are otherwise based upon our common stock or other property, having such terms and conditions as the board of directors may determine. We refer to these types

Table of Contents

of Awards as Other Stock-Based Awards. Other Stock-Based Awards may be available as a form of payment in the settlement of other Awards granted under the 2013 Stock Incentive Plan or as payment in lieu of compensation to which a participant is otherwise entitled. Other Stock-Based Awards may be paid in shares of our common stock or cash, as our board of directors determines. Dividend equivalents with respect to Other Stock-Based Awards will be subject to the same restrictions on transfer and forfeitability as the underlying Other Stock-Based Award.

Performance Awards. Restricted Stock, Restricted Stock Units and Other Stock-Based Awards granted under the 2013 Stock Incentive Plan may be made subject to achievement of performance goals. We refer to these types of Awards as Performance Awards. Performance Awards may also provide for cash payments of up to \$1,500,000 per fiscal year per individual. With respect to Performance Awards intended to qualify as performance-based compensation under Section 162(m) of the Code, the compensation committee of our board of directors shall specify, at the time of grant, that such Performance Award will be granted, vest and/or pay out solely upon the achievement of specified objective performance criteria that are based on the relative or absolute attainment of specified levels of one or any combination of the following, which may be determined pursuant to generally accepted accounting principles, or GAAP, or on a non-GAAP basis, as determined by the compensation committee:

earnings per share;

return on average equity or average assets with respect to a pre-determined peer group;

earnings;

earnings growth;

revenues;

expenses;

stock price;

market share;

return on sales, assets, equity or investment;

regulatory compliance;

achievement of balance sheet or income statement objectives;

total shareholder return;

net operating profit after tax;

pre-tax or after tax income;

cash flow;

achievement of research, development, clinical or regulatory milestones;

product sales;

business development activities;

the entry into an arrangement or agreement with a third party for the development, commercialization, marketing or distribution of products, services or technologies, or for conducting a research program to discover and develop a product, service or technology, and/or the achievement of milestones under such arrangement or agreement, including events that trigger an obligation or payment right;

achievement of domestic and international regulatory milestones, including the submission of filings required to advance products, services and technologies in clinical development and the achievement of approvals by regulatory authorities relating to the commercialization of products, services and technologies;

Table of Contents

the achievement of discovery, preclinical and clinical stage scientific objectives, discoveries or inventions for products, services and technologies under research and development;

the entry into or completion of a phase of clinical development for any product, service or technology, such as the entry into or completion of phase 1, 2 and/or 3 clinical trials;

the consummation of debt or equity financing transactions, or acquisitions of business, technologies and assets;

new product or service releases;

specified levels of product sales, net income, earnings before or after discontinued operations, interest, taxes, depreciation and/or amortization, operating profit before or after discontinued operations and/or taxes, sales, sales growth, earnings growth, cash flow or cash position, gross margins, stock price, market share, return on sales, assets, equity or investment; and

improvement of financial ratings.

The preceding performance criteria may reflect absolute entity or business unit performance or a relative comparison to the performance of a peer group of entities or other external measure of selected performance criteria and may be absolute in their terms or measured against or in relationship to other companies comparably, similarly or otherwise situated. The compensation committee may specify that such performance measures shall be adjusted to exclude any one or more of:

extraordinary items;

gains or losses on the dispositions of discontinued operations;

the cumulative effects of changes in accounting principles;

the writedown of any asset;

fluctuation in foreign currency exchange rates; and

charges for restructuring and rationalization programs.

Such performance measures (i) may vary by participant and may be different for different Awards; (ii) may be particular to a participant or the department, branch, line of business, subsidiary or other unit in which the participant works and may cover such period as may be specified by the compensation committee; and (iii) shall be set by the compensation committee within the time period prescribed by, and shall otherwise comply with the requirements of, Section 162(m). The compensation committee may adjust downwards, but not upwards, the cash or number of shares payable pursuant to such Awards and may not waive the achievement of the applicable performance measures except in the case of the death or disability of the participant or a change in control of Idera. Performance Awards that are not intended to qualify as performance-based compensation under Section 162(m) may be based on these or other performance measures as determined by our board of directors. Dividend equivalents with respect to Performance Awards will be subject to the same restrictions on transfer and forfeitability as the underlying Performance Award.

Transferability of Awards

Except as the board of directors may otherwise determine or provide in an Award in connection with certain gratuitous transfers, Awards may not be sold, assigned, transferred, pledged or otherwise encumbered by the person to whom they are granted, either voluntarily or by operation of law, except by will or the laws of descent and distribution or, other than in the case of an incentive stock option, pursuant to a qualified domestic relations order. During the life of the participant, Awards are exercisable only by the participant.

Eligibility to Receive Awards

Employees, officers, directors, consultants and advisors of Idera and of our present or future parent or subsidiary corporations and any other business venture in which Idera has a controlling interest (as determined by

Table of Contents

our board of directors) are eligible to be granted Awards under the 2013 Stock Incentive Plan. However, incentive stock options may only be granted to our employees, employees of our present or future parent or subsidiary corporations, and employees of any other entities the employees of which are eligible to receive incentive stock options under the Code. As of March 31, 2014, approximately 34 persons were eligible to receive Awards under the 2013 Stock Incentive Plan, including our executive officers and non-employee directors. The granting of Awards under the 2013 Stock Incentive Plan is discretionary, and we cannot now determine the number or type of Awards to be granted in the future to any particular person or group, except that Awards are subject to the limitations described above. On April 29, 2014, the last reported sale price of our common stock on the Nasdaq Capital Market was \$2.90.

Administration

Our board of directors administers the 2013 Stock Incentive Plan and is authorized to grant Awards and to adopt, amend and repeal the administrative rules, guidelines and practices relating to the 2013 Stock Incentive Plan and to construe and interpret the provisions of the 2013 Stock Incentive Plan and any Award agreements entered into under the 2013 Stock Incentive Plan. Our board of directors may correct any defect, supply any omission or reconcile any inconsistency in the 2013 Stock Incentive Plan or any Award in the manner and to the extent it shall deem expedient and it shall be the sole and final judge of such expediency.

Pursuant to the terms of the 2013 Stock Incentive Plan, our board of directors may delegate authority under the 2013 Stock Incentive Plan to one or more committees or subcommittees of our board of directors. Our board of directors has authorized the compensation committee to administer certain aspects of the 2013 Stock Incentive Plan, including the granting of awards to directors and executive officers. The compensation committee, with the input of management, selects the recipients of Awards and determines, in addition to other items, and subject to the terms of the 2013 Stock Incentive Plan:

the number of shares of common stock, cash or other consideration covered by Awards and the terms and conditions of such Awards, including the dates upon which such Awards become exercisable or otherwise vest;

the exercise price of Awards;

the effect on Awards of a change in control of Idera; and

the duration of Awards.

To the extent permitted by applicable law, our board of directors may delegate to one or more of our officers the power to grant stock options and certain Awards to our employees or non-executive officers and to exercise such other powers under the 2013 Stock Incentive Plan as the board of directors may determine, provided that the board of directors shall fix the terms of the Awards to be granted by such officers (including the exercise price of such Awards, which may include a formula by which the exercise price will be determined) and the maximum number of shares subject to Awards that the officers may grant. No officer shall be authorized to grant Awards to any of our executive officers. The board of directors has delegated to our chief executive officer the authority under the 2013 Stock Incentive Plan to grant stock options and restricted stock units to our non-executive employees subject to certain specified limitations and oversight by the compensation committee.

Awards to non-employee directors will only be granted and administered by a committee, all the members of which are independent as defined by Section 5605(a)(2) of the Nasdaq Listing Rules.

The board of directors may at any time provide that any Award will become immediately exercisable in whole or in part, free of some or all restrictions or conditions, or otherwise realizable in whole or in part, as the case may be, except as otherwise provided under the terms of the 2013 Stock Incentive Plan in the case of Performance Awards.

Table of Contents

Except as otherwise provided under the 2013 Stock Incentive Plan, each Award may be made alone or in addition or in relation to any other Award. The terms of each Award need not be identical, and our board of directors need not treat participants uniformly. Our board of directors shall determine the effect on an Award of the disability, death, retirement, termination or other cessation of employment, authorized leave of absence or other change in the employment or other status of a participant and the extent to which, and the period during which, the participant (or the participant's legal representative, conservator, guardian or designated beneficiary) may exercise rights under the Award.

We are required to make equitable adjustments (in the manner determined by our board of directors) to the number and class of securities available under the 2013 Stock Incentive Plan, the share counting rules and sub-limits set forth in the 2013 Stock Incentive Plan, and any outstanding Awards under the 2013 Stock Incentive Plan to reflect stock splits, stock dividends, recapitalizations, combinations of shares, reclassifications of shares, spin-offs and other similar changes in capitalization or events or any dividends or distributions to holders of our common stock other than ordinary cash dividends.

All decisions by the board of directors shall be made in the board of directors' sole discretion and shall be final and binding on all persons having or claiming any interest on the 2013 Stock Incentive Plan or in any Award. We will indemnify and hold harmless each director, officer, employee or agent to whom any duty or power relating to the administration or interpretation of the 2013 Stock Incentive Plan has been or will be delegated against any cost or expense (including attorneys' fees) or liability (including any sum paid in settlement of a claim with the board of directors' approval) arising out of any act or omission to act concerning the 2013 Stock Incentive Plan unless arising out of such person's own fraud or bad faith.

Amendment of Awards. Except as otherwise provided under the 2013 Stock Incentive Plan with respect to repricing outstanding stock options or SARs, Performance Awards or actions requiring stockholders approval, our board of directors may amend, modify or terminate any outstanding Award, including but not limited to, substituting therefor another Award of the same or a different type, changing the date of exercise or realization, and converting an incentive stock option to a nonstatutory stock option, provided that the participant's consent to any such action will be required unless our board of directors determines that the action, taking into account any related action, does not materially and adversely affect the participant's rights under the 2013 Stock Incentive Plan or the change is otherwise permitted under the terms of the 2013 Stock Incentive Plan in connection with a change in capitalization or reorganization event.

Reorganization Events

Definitions. The 2013 Stock Incentive Plan contains provisions addressing the consequences of any reorganization event. A reorganization event is defined under the terms of the 2013 Stock Incentive Plan to mean (a) any merger or consolidation of us with or into another entity as a result of which our common stock is converted into or exchanged for the right to receive cash, securities or other property, or is cancelled, (b) any transfer or disposition of all of our common stock for cash, securities or other property pursuant to a share exchange or other transaction or (c) our liquidation or dissolution.

Awards Other than Restricted Stock; Options Available to the Board of Directors. Under the 2013 Stock Incentive Plan, if a reorganization event occurs, our board of directors may take any one or more of the following actions as to all or any (or any portion of) outstanding Awards other than Restricted Stock on such terms as the board of directors determines (except to the extent specifically provided otherwise in an applicable Award agreement or another agreement between a participant and us): (A) provide that such Awards shall be assumed, or substantially equivalent Awards shall be substituted, by the acquiring or succeeding corporation (or an affiliate thereof), (B) upon written notice to a participant, provide that all of the participant's unexercised Awards will terminate immediately prior to the consummation of such reorganization event unless exercised by the participant (to the extent then exercisable) within a specified period following the date of such notice, (C) provide that

Table of Contents

outstanding Awards shall become exercisable, realizable, or deliverable, or restrictions applicable to an Award shall lapse, in whole or in part prior to or upon such reorganization event, (D) in the event of a reorganization event under the terms of which holders of common stock will receive upon consummation thereof a cash payment for each share surrendered in the reorganization event, which we refer to as the Acquisition Price, make or provide for a cash payment to participants with respect to each Award held by a participant equal to (X) the number of shares of common stock subject to the vested portion of the Award (after giving effect to any acceleration of vesting that occurs upon or immediately prior to such reorganization event) multiplied by (Y) the excess, if any, of (I) the Acquisition Price over (II) the exercise, measurement or purchase price of such Award and any applicable tax withholdings, in exchange for the termination of such Award, (E) provide that, in connection with our liquidation or dissolution, Awards shall convert into the right to receive liquidation proceeds (if applicable, net of the exercise, measurement or purchase price thereof and any applicable tax withholdings) and (F) any combination of the foregoing. Our board of directors is not obligated to treat all Awards, all Awards held by a participant, or all Awards of the same type, identically.

The 2013 Stock Incentive Plan also provides, however, that for Restricted Stock Units that are subject to Section 409A of the Code: (A) if the applicable Restricted Stock Unit agreement provides that the Restricted Stock Units shall be settled upon a change in control event within the meaning of Treasury Regulation Section 1.409A-3(i)(5)(i), and the reorganization event constitutes such a change in control event, then no assumption or substitution of the Restricted Stock Unit shall be permitted, and the Restricted Stock Units shall instead be settled in accordance with the terms of the applicable Restricted Stock Unit agreement; and (B) the board of directors may only undertake the actions set forth in clauses (C), (D) or (E) above; if the reorganization event is a change in control event as so defined under the Treasury Regulation and such action is permitted or required by Section 409A of the Code. If the reorganization event does not constitute a change in control event as defined in the Treasury Regulation or such action is not permitted or required by Section 409A of the Code, and the acquiring or succeeding corporation does not assume or substitute the Restricted Stock Units pursuant to clause (A) above, then the unvested Restricted Stock Units shall terminate immediately prior to the consummation of the reorganization event without any payment in exchange therefor.

For purposes of clause (A) above (providing for the assumption of Awards by an acquiring or succeeding corporation), an Award (other than Restricted Stock) shall be considered assumed if, following the consummation of the reorganization event, such Award confers the right to purchase or receive pursuant to the terms of such Award, for each share of common stock subject to the Award immediately prior to the consummation of the reorganization event, the consideration (whether cash, securities or other property) received as a result of the reorganization event by holders of common stock for each share of common stock held immediately prior to the consummation of the reorganization event (and if holders were offered a choice of consideration, the type of consideration chosen by the holders of a majority of the outstanding shares of common stock); provided however, that if the consideration received as a result of the reorganization event is not solely common stock of the acquiring or succeeding corporation (or an affiliate thereof), we may, with the consent of the acquiring or succeeding corporation, provide for the consideration to be received upon the exercise or settlement of the Award to consist solely of such number of shares of common stock of the acquiring or succeeding corporation (or an affiliate thereof) that the board of directors determined to be equivalent in value (as of the date of such determination or another date specified by the board of directors) to the per share consideration received by holders of outstanding shares of common stock as a result of the reorganization event.

Provisions Applicable to Restricted Stock. Upon the occurrence of a reorganization event other than our liquidation or dissolution, our repurchase and other rights with respect to outstanding Restricted Stock shall inure to the benefit of our successor and shall, unless the board of directors determines otherwise, apply to the cash, securities or other property which the common stock was converted into or exchanged for pursuant to such reorganization event in the same manner and to the same extent as they applied to such Restricted Stock; provided, however, that the board of directors may provide for termination or deemed satisfaction of such repurchase or other rights under the instrument evidencing any Restricted Stock or any other agreement between a participant and us, either initially or by amendment.

Table of Contents

Upon the occurrence of a reorganization event involving our liquidation or dissolution, except to the extent specifically provided to the contrary in the instrument evidencing any Restricted Stock or any other agreement between the participant and us, all restrictions and conditions on all Restricted Stock then outstanding shall automatically be deemed terminated or satisfied.

Provisions for Foreign Participants

Our board of directors may from time to time establish one or more sub-plans under the 2013 Stock Incentive Plan for purposes of satisfying applicable securities, tax or other laws of various jurisdictions. Our board of directors shall establish such sub-plans by adopting supplements to the 2013 Stock Incentive Plan containing any limitations on our board's discretion under the 2013 Stock Incentive Plan as our board shall deem necessary or desirable and any additional terms and conditions not otherwise inconsistent with the 2013 Stock Incentive Plan that our board shall deem necessary or desirable. All supplements adopted by our board of directors shall be deemed to be part of the 2013 Stock Incentive Plan, but each supplement shall apply only to participants within the affected jurisdiction.

Amendment or Termination

Our board of directors may amend, suspend or terminate the 2013 Stock Incentive Plan or any portion thereof at any time provided that (i) to the extent required by Section 162(m) of the Code, no Award granted to a participant that is intended to comply with Section 162(m) after the date of such amendment shall become exercisable, realizable or vested, as applicable to such Award, unless and until our stockholders approve such amendment in the manner required by Section 162(m); (ii) no amendment that would require stockholder approval under the rules of the Nasdaq Stock Market may be made effective unless and until our stockholders approve such amendment; and (iii) if the Nasdaq Stock Market amends the rules of the Nasdaq Stock Market so that such rules no longer require stockholder approval of material amendments to equity compensation plans, then, from and after the effective date of such amendment to the rules of the Nasdaq Stock Market, no amendment to the 2013 Stock Incentive Plan (A) materially increasing the number of shares authorized under the 2013 Stock Incentive Plan (other than as provided for in the 2013 Stock Incentive Plan in connection with substitute Awards, changes in capitalization or reorganization events), (B) expanding the types of Awards that may be granted under the 2013 Stock Incentive Plan, or (C) materially expanding the class of participants eligible to participate in the 2013 Stock Incentive Plan shall be effective unless and until our stockholders approve such amendment. In addition, if at any time the approval of our stockholders is required as to any other modification or amendment under Section 422 of the Code or any successor provision with respect to incentive stock options, the board of directors may not effect such modification or amendment without such approval. Unless otherwise specified in the amendment, any amendment to the 2013 Stock Incentive Plan adopted in accordance with the procedures described above shall apply to, and be binding on the holders of, all Awards outstanding under the 2013 Stock Incentive Plan at the time the amendment is adopted, provided that the board of directors determines

that such amendment, taking into account any related action, does not materially and adversely affect the rights of participants under the 2013 Stock Incentive Plan.

Effective Date and Term of 2013 Stock Incentive Plan

The 2013 Stock Incentive Plan became effective on July 26, 2013, the date the plan was approved by our stockholders. No Awards shall be granted under the 2013 Stock Incentive Plan after the expiration of 10 years from the effective date, but Awards previously granted may extend beyond that date.

Federal Income Tax Consequences

The following generally summarizes the United States federal income tax consequences that generally will arise with respect to Awards granted under the 2013 Stock Incentive Plan. This summary is based on the federal tax laws in effect as of the date of this proxy statement. In addition, this summary assumes that all Awards are

Table of Contents

exempt from, or comply with, the rules under Section 409A of the Code regarding nonqualified deferred compensation. Changes to these laws or assumptions could alter the tax consequences described below.

Incentive Stock Options. A participant will not have income upon the grant of an incentive stock option. Also, except as described below, a participant will not have income upon exercise of an incentive stock option if the participant has been employed by us or our corporate parent or 50% or more-owned corporate subsidiary at all times beginning with the option grant date and ending three months before the date the participant exercises the option. If the participant has not been so employed during that time, then the participant will be taxed as described below under Nonstatutory Stock Options. The exercise of an incentive stock option may subject the participant to the alternative minimum tax.

A participant will have income upon the sale of the stock acquired under an incentive stock option, which we refer to as ISO stock, at a profit (if sales proceeds exceed the exercise price). The type of income will depend on when the participant sells the ISO stock. If a participant sells the ISO stock more than two years after the option was granted and more than one year after the option was exercised, then all of the profit will be long-term capital gain. If a participant sells the ISO stock prior to satisfying these waiting periods, then the participant will have engaged in a disqualifying disposition and a portion of the profit will be ordinary income and a portion may be capital gain. This capital gain will be long-term if the participant has held the ISO stock for more than one year and otherwise will be short-term. If a participant sells the ISO stock at a loss (sales proceeds are less than the exercise price), then the loss will be a capital loss. This capital loss will be long-term if the participant held the ISO stock for more than one year and otherwise will be short-term.

Nonstatutory Stock Options. A participant will not have income upon the grant of a nonstatutory stock option. A participant will have compensation income upon the exercise of a nonstatutory stock option equal to the fair market value of the stock on the day the participant exercised the option less the exercise price. Upon sale of the stock, which we refer to as NSO stock, the participant will have capital gain or loss equal to the difference between the sales proceeds and the fair market value of the NSO stock on the day the option was exercised. This capital gain or loss will be long-term if the participant has held the NSO stock for more than one year and otherwise will be short-term.

Stock Appreciation Rights. A participant will not have income upon the grant of an SAR but generally will recognize compensation income upon the exercise of an SAR equal to the amount of the cash and the fair market value of any stock received. Upon the sale of the stock, the participant will have capital gain or loss equal to the difference between the sales proceeds and the value of the stock on the day the SAR was exercised. This capital gain or loss will be long-term if the participant held the stock for more than one year and otherwise will be short-term.

Restricted Stock. A participant will not have income upon the grant of Restricted Stock unless an election under Section 83(b) of the Code is made within 30 days of the date of grant. If a timely Section 83(b) election is made, then a participant will have compensation income equal to the fair market value of the stock less the purchase price, if any. When the stock is sold, the participant will have capital gain or loss equal to the difference between the sales proceeds and the fair market value of the stock on the date of grant. If the participant does not make a Section 83(b) election, then when the shares of Restricted Stock vest the participant will have compensation income equal to the fair market value of the stock on the vesting date less the purchase price. When the stock is sold, the participant will have capital gain or loss equal to the sales proceeds less the fair market value of the stock on the vesting date. Any capital gain or loss will be long-term if the participant held the stock for more than one year and otherwise will be short-term.

Restricted Stock Units. A participant will not have income upon the grant of a Restricted Stock Unit. A participant is not permitted to make a Section 83(b) election with respect to a Restricted Stock Unit. When the Restricted Stock Unit vests, the participant will have income on the vesting date in an amount equal to the fair market value of the stock on the vesting date less the purchase price, if any. When the stock is sold, the

Table of Contents

participant will have capital gain or loss equal to the sales proceeds less the value of the stock on the vesting date. Any capital gain or loss will be long-term if the participant held the stock for more than one year and otherwise will be short-term.

Other Stock-Based Awards. The tax consequences associated with any Other Stock-Based Award granted under the 2013 Stock Incentive Plan will vary depending on the specific terms of the Award. Among the relevant factors are whether or not the Award has a readily ascertainable fair market value, whether or not the Award is subject to forfeiture provisions or restrictions on transfer, the nature of the property to be received by the participant under the Award and the participant's holding period and tax basis for the Award or underlying common stock.

Tax Consequences to Idera. There will be no tax consequences to us except that we will be entitled to a deduction when a participant has compensation income. Any such deduction will be subject to the limitations of Section 162(m) of the Code.

Table of Contents

PROPOSAL FOUR

RATIFICATION OF SELECTION OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

The audit committee of our board of directors has selected the firm of Ernst & Young LLP as our independent registered public accounting firm for the fiscal year ending December 31, 2014. Ernst & Young LLP has served as our independent accountants since 2002. Although stockholder approval of the audit committee's selection of Ernst & Young LLP is not required by law, our board of directors believes that it is advisable to give stockholders an opportunity to ratify this selection. If this proposal is not approved at the 2014 annual meeting, the audit committee of our board of directors may reconsider its selection.

Representatives of Ernst & Young LLP are expected to be present at the 2014 annual meeting. They will have the opportunity to make a statement if they desire to do so and will also be available to respond to appropriate questions from stockholders.

Recommendation of the Board of Directors

Our board of directors recommends that you vote FOR the ratification of the selection of Ernst & Young LLP as our independent registered public accounting firm for the fiscal year ending December 31, 2014.

ACCOUNTING MATTERS

Report of the Audit Committee

The audit committee has reviewed our audited financial statements for the fiscal year ended December 31, 2013 and discussed them with our management and our independent registered public accounting firm.

The audit committee has also received from, and discussed with, our independent registered public accounting firm various communications that our independent registered public accounting firm is required to provide to the audit committee, including the matters required to be discussed by the Auditing Standard No. 16, Communication with Audit Committees, as adopted by the Public Company Accounting Oversight Board.

The audit committee has received from Ernst & Young LLP the letter and other written disclosures required by applicable requirements of the Public Company Accounting Oversight Board regarding its communication with the audit committee concerning independence, and has discussed with Ernst & Young LLP its independence from the Company. The audit committee has also considered whether the provision of other non-audit services by Ernst & Young LLP is compatible with maintaining their independence.

Based on the review and discussions referred to above, the audit committee recommended to our board of directors that the audited financial statements be included in our annual report on Form 10-K for the year ended December 31, 2013.

By the audit committee of the board of directors,

William S. Reardon, Chairman

C. Keith Hartley

Robert W. Karr

Table of Contents**Independent Registered Public Accounting Firm Fees**

We paid Ernst & Young LLP a total of \$510,425 for professional services rendered for the year ended December 31, 2013 and \$338,325 for professional services rendered for the year ended December 31, 2012. The following table provides information about these fees.

| Fee Category | 2013 | 2012 |
|---------------------|-------------------|-------------------|
| Audit Fees | \$ 305,500 | \$ 264,000 |
| Audit-Related Fees | 183,500 | 50,000 |
| Tax Fees | 21,425 | 24,325 |
| All Other Fees | | |
| Total Fees | \$ 510,425 | \$ 338,325 |

Audit Fees

Audit fees consist of fees for the audit of our financial statements, the review of the interim financial statements included in our quarterly reports on Form 10-Q and other professional services provided in connection with statutory and regulatory filings or engagements.

Audit-Related Fees

Audit-related fees consist of fees for assurance and related services that are reasonably related to the performance of audits and reviews of our financial statements that are not reported under Audit Fees. These services include consultations regarding internal controls, financial accounting and reporting standards and assistance with financings.

Tax Fees

Tax fees consist of fees for tax compliance, tax advice and tax planning services. Tax compliance services, which relate to preparation of tax returns, accounted for \$20,000 of the total tax fees billed in 2013 and 2012. Tax advice and tax planning services relate to consultations on our net operating loss carry forwards, collaboration agreements and stock option exercises.

All Other Fees

Ernst & Young LLP did not collect fees for any other services for 2013 or 2012.

Our audit committee believes that the non-audit services described above did not compromise Ernst & Young LLP's independence. Our audit committee charter, which you can find by clicking [Investors](#) and [Corporate Governance](#) on our website, www.iderapharma.com, requires that all proposals to engage Ernst & Young LLP for services, and all proposed fees for these services, be submitted to the audit committee for approval before Ernst & Young LLP may provide the services.

Pre-Approval Policies and Procedures

Our audit committee has adopted policies and procedures relating to the approval of all audit and non-audit services that are to be performed by our independent registered public accounting firm. This policy generally provides that we will not engage our independent registered public accounting firm to render audit or non-audit services unless the service is specifically approved in advance by the audit committee or the engagement is entered into pursuant to the pre-approval procedures described below.

From time to time, the audit committee may pre-approve specified types of services that are expected to be provided to us by our independent registered public accounting firm during the next 12 months. Any such pre-approval is detailed as to the particular service or type of services to be provided and is also generally subject to a maximum dollar amount. All of the services described above under the headings [Audit-Related Fees](#), [Tax Fees](#) and [All Other Fees](#) were pre-approved by our audit committee.

Table of Contents

TRANSACTIONS WITH RELATED PERSONS

Since January 1, 2013, except as discussed below regarding transactions with (i) Pillar Pharmaceuticals I, L.P., or Pillar I, Pillar Pharmaceuticals II, L.P., or Pillar II, Pillar Pharmaceuticals III, L.P., or Pillar III, and Pillar Pharmaceuticals IV, L.P., or Pillar IV, which, as a group, are currently greater than 5% stockholders and are affiliated with Mr. El Zein and Mr. Umari, who are currently members of our board of directors, and (ii) 667, L.P., Baker Brothers Life Sciences, L.P. and 14159, L.P., which we refer to collectively as the Funds, which are affiliated with Mr. Baker and Dr. Neu, who are currently members of our board of directors, we have not entered into or engaged in any related party transactions, as defined by the SEC, with our directors, officers and stockholders who beneficially owned more than 5% of our outstanding common stock, as well as affiliates or immediate family members of those directors, officers and stockholders. We believe that the terms of our transactions described below were no less favorable than those that we could have obtained from unaffiliated third parties.

Pillar Agreements

On April 22, 2013, we entered into an agreement with Pillar I and Pillar II, which we refer to as the April 22, 2013 Pillar Agreement. Under the April 22, 2013 Pillar Agreement, Pillar I irrevocably agreed to waive and not exercise the rights, powers, preferences and other terms of our Series D redeemable convertible preferred stock, or Series D preferred stock, under Section 6 of the Certificate of Designations, Preferences and Rights of Series D Preferred Stock, or the Series D Certificate of Designations, including without limitation the right to require us to purchase all or any portion of the shares of our Series D preferred stock at a price equal to the original Series D preferred stock purchase price per share plus all accrued or declared but unpaid dividends thereon upon the occurrence of specified fundamental changes such as mergers, consolidations, business combinations, stock purchases or similar transactions resulting in a person or group unaffiliated with any holder of Series D preferred stock owning 66.67% or more of the outstanding voting securities of our company or successor entity.

Under the April 22, 2013 Pillar Agreement, we agreed to seek approval and each of Pillar I and Pillar II agreed to vote in favor of the following proposals at our 2013 annual meeting of stockholders:

amendments to the Series D Certificate of Designations for our Series D preferred stock to:

modify the dividend provisions of the Series D Certificate of Designations to change the date after which we may elect to pay dividends in shares of our common stock from December 31, 2014 to October 1, 2013, and to allow for the payment of such dividends in shares of a to-be-created new series of non-voting preferred stock in the event that payment of such dividends may not be made in shares of our common stock as a result of the application of the beneficial ownership and voting power limitations set forth the Series D Certificate of Designations; and

modify the Series D Certificate of Designations to provide, in the event of a sale of our company, for the distribution of any assets that remain available for distribution to our stockholders, after payment to the holders of our Series A convertible preferred stock and any other class of our capital stock that ranks senior to our Series D preferred stock, to the holders of our Series D preferred stock on a pro rata basis with the holders of our common stock, Series E preferred stock and such new series of non-voting preferred stock; and

amendments to the Certificate of Designations, Preferences and Rights of Series E Preferred Stock, or the Series E Certificate of Designations, to:

modify the dividend provisions of the Series E Certificate of Designations to allow for the payment of dividends in shares of our common stock commencing October 1, 2013; and

allow for the payment of dividends in shares of a to-be-created new series of non-voting preferred stock in the event that payment of such dividends may not be made in shares of our common stock as a result of the application of the beneficial ownership and voting power limitations set forth in the Series E Certificate of Designations.

Table of Contents

In addition, on April 30, 2013, we entered into a second agreement with Pillar I, Pillar II and an entity affiliated with Pillar I and Pillar II, which we refer to collectively as the Pillar Entities, which we refer to as the April 30, 2013 Pillar Agreement. We refer to the April 30, 2013 Pillar Agreement and the April 22, 2013 Pillar Agreement collectively as the Pillar Agreements.

Under the April 30, 2013 Pillar Agreement, Pillar I irrevocably agreed to waive the right of the holders of the Series D preferred stock under Section 2.1 of the Series D Certificate of Designations to receive, in the event of a voluntary or involuntary liquidation, dissolution or winding up of our company, or Liquidation, an amount per share of Series D preferred stock equal to the original issue price of such share of Series D preferred stock plus any dividends accrued or declared but unpaid thereon to the extent such amount is greater than the amount that would have been payable with respect to such share had all shares of Series D preferred stock been converted into shares of our common stock immediately prior to such Liquidation, and agreed that upon a Liquidation the holders of the Series D preferred stock would receive an amount per share of Series D preferred stock equal to the amount that would be payable with respect to such share had all shares of Series D preferred stock been converted into shares of our common stock immediately prior to such Liquidation.

In addition, under the April 30, 2013 Pillar Agreement, Pillar II and the entity affiliated with Pillar II, together the holders of 100% of the Series E preferred stock, irrevocably agreed to waive the right of the holders of the Series E preferred stock under Section 2.1.1 of the Series E Certificate of Designations to receive, in the event of a Liquidation, an amount per share of Series E preferred stock equal to the original issue price of such share of Series E preferred stock plus any dividends accrued or declared but unpaid thereon to the extent such amount is greater than the amount that would have been payable with respect to such share had all shares of Series E preferred stock been converted into shares of our common stock immediately prior to such Liquidation, and that upon a Liquidation the holders of the Series E preferred stock would receive under Section 2.1 of the Series E Certificate of Designations an amount per share of Series E preferred stock equal to the amount that would be payable with respect to such share had all shares of Series E preferred stock been converted into shares of our common stock immediately prior to such Liquidation.

In accordance with the terms of the Pillar Agreements, we sought approval from our stockholders of amendments to the Series D Certificate of Designations and Series E Certificate of Designations to effect the changes described above to the dividend and liquidation provisions of our Series D preferred stock and Series E preferred stock, the redemption rights of the holders of our Series D preferred stock and the rights of the holders of our Series D preferred stock to distributions in the event of a sale of our company. These matters were approved at our 2013 annual meeting of stockholders.

Under the April 22, 2013 Pillar Agreement, in consideration of the agreements of Pillar I and Pillar II under the April 22, 2013 Pillar Agreement and the delivery of the waiver by Pillar I, and for no additional cash consideration, we issued to Pillar I warrants, or the Pillar I Warrants, to purchase up to 1,000,000 shares of our common stock. The Pillar I Warrants have an exercise price per share equal to \$0.61.

In addition, under the April 30, 2013 Pillar Agreement, in consideration of the agreements of the Pillar Entities under the April 30, 2013 Pillar Agreement and the delivery of the waivers by the Pillar Entities, and for no additional cash consideration, we issued to the Pillar Entities warrants, the Additional Pillar Warrants, and together with the Pillar I Warrants, the Pillar Warrants, to purchase up to an aggregate of 1,000,000 shares of our common stock. The Additional Pillar Warrants have an exercise price per share equal to \$0.79.

The Pillar I Warrants are exercisable immediately and will expire if not exercised on or prior to May 7, 2018, the fifth anniversary of the date of issuance. The Additional Pillar Warrants are each exercisable immediately and will expire if not exercised on or prior to June 1, 2014. The Pillar I Warrants provide that, after May 7, 2015, the second anniversary of the date of issuance, we may redeem such Pillar I Warrants for \$0.01 per share of common stock issuable on exercise of such Pillar I Warrants following notice to the holder thereof if the closing price of our common stock for 20 or more trading days in a period of 30 consecutive trading days is greater than or equal to \$2.80 per share.

Table of Contents

In connection with the Pillar Agreements, we filed a registration statement that became effective on July 10, 2013, registering the resale of the shares of common stock issuable upon exercise of the Pillar Warrants.

On January 10, 2014, we notified Pillar I, the holder of all 1,124,260 shares of our authorized, issued and outstanding Series D preferred stock, of our intention to redeem the Series D preferred stock on February 10, 2014 in accordance with the terms of the Series D Certificate of Designations. Following this notice, Pillar I had the right to convert its Series D preferred stock into shares of our common stock at any time prior to the close of business on February 9, 2014. On February 6, 2014, Pillar I converted such shares into 6,266,175 shares of our common stock in accordance with the terms of the Series D Certificate of Designations. As a result of the conversion, no shares of our Series D preferred stock remain outstanding.

Public Offerings

May 2013 Offering

On May 7, 2013, we consummated an underwritten public offering of (i) 17,500,000 shares of our common stock and related warrants to purchase up to 17,500,000 shares of our common stock at an exercise price of \$0.47 per share, and (ii) pre-funded warrants to purchase up to 15,816,327 shares of our common stock at an exercise price of \$0.01 per share and related warrants to purchase up to 15,816,327 shares of our common stock at an exercise price of \$0.47 per share, which we refer to as the May 2013 Offering. The gross proceeds to us from this offering were approximately \$16.5 million, before deducting underwriting discounts and commissions and other estimated offering expenses payable by us and excluding the proceeds, if any, from the exercise of warrants.

Certain affiliates of Pillar Invest Corporation, including Pillar III, participated in the May 2013 Offering and purchased in the aggregate 5,000,000 shares of our common stock and related warrants to purchase up to 5,000,000 shares of our common stock for an aggregate purchase price of \$2,500,000.

Certain affiliates of the Funds also participated in the May 2013 Offering and purchased in the aggregate (i) 4,500,000 shares of our common stock and related warrants to purchase up to 4,500,000 shares of our common stock and (ii) pre-funded warrants to purchase up to 15,816,327 shares of our common stock and related warrants to purchase up to 15,816,327 shares of our common stock for an aggregate purchase price of \$10,000,000.

September 2013 Offering

On September 30, 2013, we consummated an underwritten public offering of (i) 13,727,251 shares of our common stock, and (ii) pre-funded warrants to purchase up to 4,175,975 shares of our common stock at an exercise price of \$0.01 per share, which we refer to as the September 2013 Offering. The gross proceeds to us from this offering were approximately \$27.7 million, before deducting underwriting discounts and commissions and other estimated offering expenses payable by Idera and excluding the proceeds, if any, from the exercise of warrants.

Certain affiliates of Pillar Invest Corporation, including Pillar IV, participated in the September 2013 Offering and purchased in the aggregate 1,774,193 shares of our common stock for an aggregate purchase price of \$2,750,000.

Certain affiliates of the Funds also participated in the September 2013 Offering and purchased in the aggregate 1,365,000 shares of our common stock and pre-funded warrants to purchase up to 4,175,975 shares of our common stock for an aggregate purchase price of \$8,546,750.

February 2014 Offering

On February 10, 2014, we consummated an underwritten public offering of (i) 7,867,438 shares of our common stock, and (ii) pre-funded warrants to purchase up to 2,158,750 shares of our common stock at an

Table of Contents

exercise price of \$0.01 per share, which we refer to as the February 2014 Offering. The gross proceeds to us

from this offering were approximately \$40.1 million, before deducting underwriting discounts and commissions and other estimated offering expenses payable by Idera and excluding the proceeds, if any, from the exercise of warrants.

Certain affiliates of the Funds participated in the February 2014 Offering and purchased in the aggregate 341,250 shares of our common stock and pre-funded warrants to purchase up to 2,158,750 shares of our common stock for an aggregate purchase price of \$9,978,410.

Policies and Procedures for Related Person Transactions

Our board of directors is committed to upholding the highest legal and ethical conduct in fulfilling its responsibilities and recognizes that related party transactions can present a heightened risk of potential or actual conflicts of interest. Accordingly, as a general matter, it is our preference to avoid related party transactions.

In accordance with our audit committee charter, members of the audit committee, all of whom are independent directors, review and approve all related party transactions for which approval is required under applicable laws or regulations, including SEC and the Nasdaq Listing Rules. Current SEC rules define a related party transaction to include any transaction, arrangement or relationship in which we are a participant and the amount involved exceeds \$120,000, and in which any of the following persons has or will have a direct or indirect interest:

our executive officers, directors or director nominees;

any person who is known to be the beneficial owner of more than 5% of our common stock;

any person who is an immediate family member, as defined under Item 404 of Regulation S-K, of any of our executive officers, directors or director nominees or beneficial owners of more than 5% of our common stock; or

any firm, corporation or other entity in which any of the foregoing persons is employed or is a partner or principal or in a similar position or in which such person, together with any other of the foregoing persons, has a 5% or greater beneficial ownership interest.

In addition, the audit committee reviews and investigates any matters pertaining to the integrity of management, including conflicts of interest and adherence to our code of business conduct and ethics. Under our code of business conduct and ethics, our directors, officers and employees are expected to avoid any relationship, influence or activity that would cause or even appear to cause a conflict of interest. Under our code of business conduct and ethics, a director is required to promptly disclose to our board of directors any potential or actual conflict of interest involving him or her. In accordance with our code of business conduct and ethics, the board of directors will determine an appropriate resolution on a case-by-case basis. All directors must recuse themselves from any discussion or decision affecting their personal, business or professional interests.

SECTION 16(a) BENEFICIAL OWNERSHIP REPORTING COMPLIANCE

Based solely on our review of copies of reports filed by individuals and entities required to make filings pursuant to Section 16(a) of the Exchange Act or written representations from such individuals or entities, we believe that during 2013 all filings required to be made by such individuals or entities were timely made in accordance with the Exchange Act, with the exception of (i) one late Form 4 filed by Pillar Invest Corp., certain of its affiliates and Mr. El Zein on May 17, 2013 to report the issuance of warrants to purchase common stock on May 7, 2013 to certain affiliates of Pillar Invest Corp. in connection with the Pillar Agreements and the purchase of common stock and warrants to purchase common stock on May 7, 2013 by certain affiliates of Pillar Invest Corp. in connection with the May 2013 Offering; (ii) one late Form 3 filed by Pillar III on May 17, 2013 to report

Table of Contents

the purchase of common stock and warrants to purchase common stock on May 7, 2013 in connection with the May 2013 Offering; (iii) one late Form 4 filed by Mr. Umari on May 17, 2013 to report the issuance of warrants to purchase common stock on May 7, 2013 to certain affiliates of Pillar Invest Corp. in connection with the Pillar Agreements and the purchase of common stock and warrants to purchase common stock on May 7, 2013 by certain affiliates of Pillar Invest Corp. in connection with the May 2013 Offering; and (iv) one Form 3/A filed on May 20, 2013 by Mr. Umari to correct his initial holdings from his Form 3 filed on November 9, 2012. All of such filings were filed late or required amendment due to administrative error.

By order of the board of directors,

Louis J. Arcudi, III, Secretary

April 30, 2014

Table of Contents

Using a **black ink** pen, mark your votes with an **X** as shown in this example. Please do not write outside the designated areas.

X

Electronic Voting Instructions

Available 24 hours a day, 7 days a week!

Instead of mailing your proxy, you may choose one of the voting methods outlined below to vote your proxy.

VALIDATION DETAILS ARE LOCATED BELOW IN THE TITLE BAR.

Proxies submitted by the Internet or telephone must be received by 11:59 p.m., Eastern Time, on June 8, 2014.

Vote by Internet

Go to **www.investorvote.com/IDRA**
 Or scan the QR code with your smartphone
 Follow the steps outlined on the secure website

Vote by telephone

Call toll free 1-800-652-VOTE (8683) within the USA, US territories & Canada on a touch tone telephone
 Follow the instructions provided by the recorded message

q IF YOU HAVE NOT VOTED VIA THE INTERNET OR TELEPHONE, FOLD ALONG THE PERFORATION, DETACH AND RETURN THE BOTTOM PORTION IN THE ENCLOSED ENVELOPE. q

A Proposals The Board of Directors recommends a vote FOR all the nominees listed and FOR Proposals 2 4.

1. Election of Directors:

| | For | Withhold | | For | Withhold | |
|-----------------------------|-----|----------|-------------------|-----|----------|-------------------|
| | All | All | For All Except | All | All | For All Except |
| 01 - Dr. Kelvin M. Neu | .. | .. | .. | .. | .. | .. |
| 02 - Mr. William S. Reardon | .. | .. | .. | .. | .. | .. |

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INSTRUCTIONS: To withhold authority to vote for any individual nominee(s), mark For All Except and write the name of the nominee(s) on the line below.

| | For | Against | Abstain | | For | Against | Abstain |
|--|------------|----------------|----------------|---|------------|----------------|----------------|
| 2. Approval, by non-binding vote, of executive compensation. | .. | .. | .. | 3. Approval of an amendment to our 2013 Stock Incentive Plan to increase the number of shares authorized for issuance thereunder. | .. | .. | .. |
| 4. Ratification of the selection of Ernst & Young LLP as our independent registered public accounting firm for the fiscal year ending December 31, 2014. | .. | .. | .. | | | | |

B Non-Voting Items

Change of Address Please print new address below.

Comments Please print your comments below.

C Authorized Signatures This section must be completed for your vote to be counted. **Date and Sign Below**
 Please sign this proxy exactly as your name appears hereon. Joint owners should each sign personally. Trustees and other fiduciaries should indicate the capacity in which they sign. If a corporation or partnership, this signature should be that of an authorized officer who should state his or her title.

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Date (mm/dd/yyyy) Please print date below.
box.

Signature 1 Please keep signature within the box.

Signature 2 Please keep signature within the box.

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Table of Contents

q IF YOU HAVE NOT VOTED VIA THE INTERNET OR TELEPHONE, FOLD ALONG THE PERFORATION, DETACH AND RETURN THE BOTTOM PORTION IN THE ENCLOSED ENVELOPE. q

**Proxy IDERA PHARMACEUTICALS, INC.
PROXY SOLICITED BY THE BOARD OF DIRECTORS**

Annual Meeting of Stockholders June 9, 2014

Those signing on the reverse side, revoking all prior proxies, hereby appoint(s) Dr. Sudhir Agrawal and Mr. Louis J. Arcudi, III, or each or any of them with full power of substitution, as proxies for those signing on the reverse side to act and vote all shares of stock of Idera Pharmaceuticals, Inc. which the undersigned would be entitled to vote if personally present at the 2014 Annual Meeting of Stockholders of Idera Pharmaceuticals, Inc. and at any adjournment or postponement thereof as indicated upon all matters referred to on the reverse side and described in the Proxy Statement for the Meeting, and, in their discretion, upon any other matters which may properly come before the Meeting. Attendance of the undersigned at the Meeting or at any adjournment or postponement thereof will not be deemed to revoke this proxy unless those signing on the reverse side shall revoke this proxy in writing.

THIS PROXY WHEN PROPERLY EXECUTED WILL BE VOTED IN THE MANNER DIRECTED BY THE STOCKHOLDER(S) SIGNING THE REVERSE SIDE AND IN THE DISCRETION OF THE PROXIES UPON ANY OTHER MATTERS WHICH PROPERLY COME BEFORE THE MEETING. IF NO INDICATION IS MADE, THE PROXIES SHALL VOTE FOR THE DIRECTOR NOMINEES AND FOR PROPOSALS NUMBERED 2, 3 AND 4.

PLEASE VOTE, DATE AND SIGN ON OTHER SIDE AND RETURN PROMPTLY IN ENCLOSED ENVELOPE.

YOUR VOTE IS IMPORTANT. PLEASE VOTE TODAY.