

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

SCHEDULE 14A

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:

IDERA PHARMACEUTICALS, INC.

167 Sidney Street
Cambridge, Massachusetts 02139

NOTICE OF 2009 ANNUAL MEETING OF STOCKHOLDERS

Date and Time: June 16, 2009 at 10:00 a.m., local time

Place: WilmerHale
60 State Street
Boston, Massachusetts 02109

Items of Business: At the meeting, we will ask our stockholders to:

- Elect two Class II Directors to our board of directors for terms to expire at the 2012 annual meeting of stockholders;
- Ratify the selection by our audit committee of Ernst & Young LLP as our independent registered public accounting firm for the fiscal year ending December 31, 2009; and
- Transact any other business as may properly come before the meeting or any postponement or adjournment of the meeting.

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

Record Date: You may vote at this annual meeting if you were a stockholder of record at the close of business on April 20, 2009.

Proxy Voting: It is important that your shares be represented and voted at the meeting. Whether or not you plan to attend the 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 internet. You may revoke your proxy at any time before its exercise at the meeting.

By order of the board of directors,

/s/ LOUIS J. ARCUDI, III
Louis J. Arcudi, III
Secretary

Cambridge, Massachusetts
April 30, 2009

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IDERA PHARMACEUTICALS, INC.

167 Sidney Street
Cambridge, Massachusetts 02139

PROXY STATEMENT

For our Annual Meeting of Stockholders to be held on June 16, 2009

Idera Pharmaceuticals, Inc., a Delaware corporation, which is referred to as “we” or “us” 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 2009 annual meeting of stockholders. The annual meeting will be held on Tuesday, June 16, 2009, at 10:00 a.m., local time, at the offices of WilmerHale, 60 State Street, Boston, Massachusetts 02109. If the annual meeting is adjourned for any reason, then proxies submitted may be used at any adjournments of the annual meeting.

This proxy statement summarizes information about the proposals to be considered at the 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, 2009.

In this mailing, we are also including copies of our annual report to stockholders for the year ended December 31, 2008. Our annual report on Form 10-K for the year ended December 31, 2008, as filed with the Securities and Exchange Commission, or the SEC, including our audited financial statements, is included in our annual report to stockholders and is also available free of charge on our website, www.iderapharma.com, and 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 Annual Report on Form 10-K, which we will provide to you free of charge, or to obtain directions to be able to attend the meeting and vote in person, write to Investor Relations, Idera Pharmaceuticals, Inc., 167 Sidney Street, Cambridge, Massachusetts, 02139, call our toll-free number 1 (800) 223-3771, or email Investor Relations at ir@iderapharma.com.**

**Important Notice Regarding the Availability of
Proxy Materials for the Annual Meeting of Stockholders
to Be Held on June 16, 2009:**

**The Notice of Annual Meeting, Proxy Statement and 2008 Annual Report are available at
<http://ir.iderapharma.com/phoenix.zhtml?c=208904&p=proxy>**

INFORMATION ABOUT THE ANNUAL MEETING Who may vote?

Holders of record of our common stock at the close of business on April 20, 2009, the record date for the meeting, are entitled to one vote per share on each matter properly brought before the meeting. As of the close of business on April 20, 2009, we had 23,431,463 shares of our common stock outstanding.

How may 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, BNY Mellon Shareowner Services, 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 in the United States.

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- *You may vote by telephone.* To vote by telephone through services provided by BNY Mellon Shareowner Services call 1-866-540-5760, 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 by Internet.* To vote over the Internet through services provided by BNY Mellon Shareowner Services, please go to the following website: <http://www.proxyvoting.com/idra> and follow the instructions at that site for submitting your proxy card. If you vote on the Internet, you do not need to complete and mail your proxy card.
- *You may vote in person.* If you attend the annual meeting, you may vote by delivering your completed proxy card in person or you may vote by completing a ballot at the meeting. Ballots will be available at the meeting.

Your proxy will only be valid if you complete and return the proxy card, vote by telephone or vote by Internet at or before the 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 by Internet. If you return the proxy card, 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.

The proxy card enclosed with this proxy statement states the number of shares you are entitled to vote if you are a stockholder of record.

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 your bank or brokerage firm provides you. Many banks and brokerage firms may solicit voting instructions over the internet or by telephone.

If you do not give instructions to your bank or brokerage firm, it will still be able to vote your shares with respect to certain “discretionary” items. The election of directors (proposal one) and the ratification of Ernst & Young LLP, our independent registered public accounting firm (proposal two) are considered discretionary items. Accordingly, your bank or brokerage firm may vote your shares with respect to either matter if you do not give instructions. If your bank or brokerage firm does not exercise its discretionary authority with respect to proposal one or two, your shares will be treated as “broker non-votes” on that particular matter. “Broker non-votes” are shares with respect to which a bank or brokerage firm does not receive voting instructions from the beneficial holder and does not have or exercise discretionary authority in voting on a proposal.

Regardless of whether your shares are held in street name, you are welcome to attend the meeting. If your shares are held in street name, you may not vote your shares in person at the meeting unless you obtain a proxy, executed in your favor, from the holder of record (i.e., your brokerage firm or bank). If you hold your shares in street name and wish to vote in person, please contact your brokerage firm or bank before the 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, you may revoke it at any time before it 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 proxy;
- send us another signed proxy card with a later date, vote by telephone or vote by internet; or
- attend the 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 your vote.

What constitutes a quorum?

In order for business to be conducted at the meeting, a quorum must be present. A quorum consists of the holders of at least 11,715,732 shares, representing a majority of the shares of common stock issued, outstanding and entitled to vote at the meeting.

Shares of common 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 meeting will be adjourned until a quorum is obtained.

What vote is required to approve each matter?

Proposal One — Election of Directors — Directors will be elected by a plurality of the votes cast by our stockholders entitled to vote on the election. In other words, the two nominees for director receiving the highest number of votes FOR election will be elected as directors, regardless of whether any of those numbers represents a majority of the votes cast.

You may vote FOR all of the nominees, WITHHOLD your vote from all of the nominees or WITHHOLD your vote from any one or more of the nominees.

Proposal Two — Ratification of the Selection of Ernst & Young LLP — The affirmative vote of the holders of a majority of the shares of common stock present or represented and voting on the matter is needed to ratify the selection of Ernst & Young LLP as our independent registered public accounting firm for the fiscal year ending December 31, 2009.

How will votes be counted?

Each share of common stock will be counted as one vote. Shares will not be voted in favor of a matter, and will not be counted as voting on a matter if the holder of the shares either withholds authority in the proxy to vote for a particular director nominee or nominees, or abstains from voting on a particular matter, or if the shares are broker non-votes. As a result, withheld shares, abstentions and broker non-votes will have no effect on the outcome of voting on the election of directors and the ratification of the selection of Ernst & Young LLP.

How does the board of directors recommend that I vote?

Our board of directors recommends that you vote to elect the two nominees to the board of directors and FOR the ratification of the selection of Ernst & Young LLP.

Will any other business be conducted at the annual meeting?

Our board of directors does not know of any other business to be conducted or matters to be voted upon at the meeting. Under our bylaws, the deadline for stockholders to notify us of any proposals or nominations for director to be presented for action at the annual meeting has passed. If any other matter properly comes before the 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, at the meeting with respect to that matter.

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

We are making the solicitation and will bear the costs of soliciting proxies. In addition to solicitations by mail, our directors, officers and regular employees, without additional remuneration, may solicit proxies by telephone, facsimile, email, personal interviews and other means. 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 2010 annual meeting?

If you are interested in submitting a proposal for inclusion in the proxy statement and the proxy card for our 2010 annual meeting, you need to follow the procedures outlined in Rule 14a-8 of the Securities Exchange Act of 1934. 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, 2009. 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 2010 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, including in the case of director nominations, relevant biographical information with respect to the nominee, 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 2010 annual meeting. Notwithstanding the foregoing, if we provide less than 70 days notice or prior public disclosure of the date of the 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 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, brokers and other nominee record holders may be participating in the practice of "householding" proxy statements and annual reports. This means that the brokers and nominee record holders 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 make such a request, please call (617) 679-5500 or write to Investor Relations, 167 Sidney Street, Cambridge, Massachusetts 02139 or ir@iderapharma.com. To receive separate copies of our annual report and proxy statement in the future, or to receive only one copy for the household, please contact your bank, broker, or other nominee record holder, or contact us at the above address and phone number.

PROPOSAL 1 — ELECTION OF DIRECTORS General Information

Our board of directors is divided into three classes and currently consists of three Class I directors, C. Keith Hartley, Hans Mueller, Ph.D. and William S. Reardon, C.P.A., two Class II directors, Robert W. Karr, M.D. and James B. Wyngaarden, M.D., and three Class III directors, Sudhir Agrawal, D. Phil., Youssef El Zein and Alison Taunton-Rigby, Ph.D. The terms of the three classes are staggered so that one class is elected each year. Members of each class are elected for three-year terms. The Class I, Class II and Class III directors were elected to serve until the annual meeting of stockholders to be held in 2011, 2009 and 2010, 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 Drs. Karr and Wyngaarden for election as Class II directors. The persons named in the enclosed proxy card will vote to elect Drs. Karr and Wyngaarden as Class II directors unless you withhold authority to vote for the election of any or all nominees by marking the proxy to that effect. The proxy card may not be voted for more than two directors. Each Class II director will be elected to hold office until the 2012 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 as Class II directors, the names of each Class I director and each Class III director, the years in which each first became a director, their ages as of March 31, 2009, 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 serve as a director.

Our board of directors recommends that you vote FOR the election of Robert W. Karr and James B. Wyngaarden as Class II directors.

Director Nominees Class II Directors — Terms to Expire in 2012

Robert W. Karr, M.D.

Director since 2005

Dr. Karr, age 60, is an independent consultant to biotechnology companies. 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 Wamer-Lambert Company, a pharmaceutical company. He also serves on the board of directors of GTX, Inc., a biotechnology company.

James B. Wyngaarden, M.D.

Director since 1990

Dr. Wyngaarden, age 84, has been Chairman of our board of directors since February 2000 and was Vice Chairman from February 1997 to February 2000. Dr. Wyngaarden co-founded the Washington Advisory Group LLC, a consulting firm, in 1996 and remained a principal until January 2002. He was Senior Associate Dean, International Affairs at the University of Pennsylvania Medical School from 1995 to 1997. Dr. Wyngaarden was Foreign Secretary of the National Academy of Sciences and the Institute of Medicine from 1990 to 1994. He was Director of the Human Genome Organization from 1990 to 1991 and a council member from 1990 to 1993. Dr. Wyngaarden was Director of the National Institutes of Health from 1982 to 1989, and Associate Director for Life Sciences, Office of Science and Technology Policy in the Executive Office of the President, the White House, from 1989 to 1990.

Continuing Members of the Board of Directors

Class III Directors — Terms to Expire in 2010

Sudhir Agrawal, D. Phil.

Director since 1993

Dr. Agrawal, age 55, is our President, Chief Executive Officer and Chief Scientific Officer. Dr. Agrawal has served as our President since September 2008, as Chief Executive Officer since August 2004 and as Chief Scientific Officer since January 1993. He also served 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 from 1987 through 1991 and carried out his post-doctoral research at the Medical Research Council's Laboratory of Molecular Biology in Cambridge, England from 1985 to 1986.

Youssef El Zein

Director since 1992

Mr. El Zein, age 60, has been Vice Chairman of our board of directors since February 1997. Mr. El Zein has been managing partner of Pillar Investment Limited, a private investment firm, since 1991. Mr. El Zein is also a managing partner of Search Dynamics Corporation and Optima Strategic Corporation, two special purpose vehicles founded by Pillar that invest in early stage technology-based companies.

Alison Taunton-Rigby, Ph.D.

Director since 2004

Dr. Taunton-Rigby, age 64, has been President and Chief Executive Officer of RiboNovix, Inc., a privately held development stage biotechnology company she co-founded, since February 2003. Prior to this, Dr. Taunton-Rigby was Chief Executive Officer of CMT, Inc., a healthcare technology company, from 2001 to 2003. Previously, Dr. Taunton-Rigby was President and Chief Executive Officer of Aquila Biopharmaceuticals, Inc., a life sciences company, President and Chief Executive Officer of Cambridge Biotech Corporation, a life sciences company, President and Chief Executive Officer of Mitotix, Inc., a biopharmaceutical company, and Senior Vice President, Biotherapeutics at Genzyme Corporation, and held senior management positions at Biogen, Inc. (now Biogen Idec), Vivotech Inc., Collaborative Research, Inc. and Arthur D. Little. Dr. Taunton-Rigby also serves as a director of Healthways, Inc., a provider of health and wellness services, Abt Associates, Inc., a research and consulting company, RiverSource Funds, a mutual fund complex, and the Children's Hospital Boston.

Class I Directors — Terms to Expire in 2011

C. Keith Hartley

Director since 2000

Mr. Hartley, age 66, has been President of Hartley Capital Advisors, a financial consulting firm, since June 2000. Mr. Hartley was Managing Partner of Forum Capital Markets LLC, an investment banking firm, from August 1995 to May 2000. Mr. Hartley also serves as a director of Universal Display Corporation, a developer of flat panel displays.

Hans Mueller, Ph.D.

Director since 2007

Dr. Mueller, age 68, most recently served as Senior Vice President of Global Business Development at Wyeth Pharmaceuticals, a pharmaceutical company, from 1993 to 2004. Upon his retirement in 2004, Dr. Mueller began consulting for a number of private life science companies. From 1985 to 1993, Dr. Mueller served as Executive Vice President, President and Chief Executive Officer of Nova Pharmaceutical Corporation (now part of Scios, Inc.), a drug research and development company. Previously, he held roles with increasing levels of responsibility at Sandoz, now part of Novartis AG, a pharmaceutical company, in the areas of research, regulatory affairs, manufacturing, systems development, new product planning, licensing and business development.

William S. Reardon, C.P.A.

Director since 2002

Mr. Reardon, age 62, was 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 also serves as a director of Oscient Pharmaceuticals Corporation, a pharmaceutical company, and Synta Pharmaceuticals, Inc., a biopharmaceutical company.

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. We periodically review our cash and equity-based compensation for non-employee directors.

2008 Director Compensation

Under our director compensation program, we pay our non-employee directors retainers in cash. Each director receives a cash retainer for service on the board of directors and for service on each committee on which the director is a member. The chairman of the board and the chairman of each committee receives a higher retainer for such service. These fees are payable quarterly in arrears and are as follows:

	<u>Member Annual Fee</u>	<u>Chairman Annual Fee</u>
Board of Directors	\$ 35,000	\$ 60,000
Audit Committee	\$ 7,000	\$ 15,000
Compensation Committee	\$ 5,000	\$ 10,000
Nomination and Corporate Governance Committee	\$ 3,500	\$ 7,500

Our director compensation program also includes a stock-for-fees policy, under which directors have the right to elect to receive common stock in lieu of cash fees. The number of shares to be issued to participating directors is determined on a quarterly basis by dividing the cash fees to be issued in common stock by the fair market value of our common stock, which is the closing price of our common stock, on the first business day of the quarter following the quarter in which the fees were earned. No director received stock for fees in 2008.

Under our director compensation program, upon their initial election to the board of directors, new non-employee directors receive an option grant for 16,000 shares and all non-employee directors receive an annual option grant for 10,000 shares. The annual grants are made on the date of the annual meeting of stockholders. These options vest quarterly over three years from the date of grant, subject to continued service as a director, and are granted under our 2008 Stock Incentive Plan. These options are granted with exercise prices equal to the fair market value of our common stock, which is the closing price of our common stock, on the date of grant and become immediately exercisable in full if there is a change in control of our company.

On January 2, 2008, our board of directors granted all currently serving non-employee directors an option to purchase 16,000 shares of our common stock at an exercise price equal to the closing price of our common stock on January 2, 2008, which was \$13.28. These options vest quarterly over three years from the date of grant, subject to continued service as a director and become immediately exercisable in full if there is a change in control of our company. These options were granted as a one-time grant.

We also reimburse our directors for travel and other related expenses for attendance at meetings.

The following table sets forth a summary of the compensation we paid to our non-employee directors for service on our board in 2008.

DIRECTOR COMPENSATION TABLE FOR 2008

Name	Fees Earned or Paid in Cash (\$)	Option Awards (\$)(1)	All Other Compensation (\$)	Total (\$)
Youssef El Zein	\$35,000	\$74,318	—	\$109,318
C. Keith Hartley	\$47,500	\$74,318	—	\$121,818
Robert W. Karr	\$35,000	\$55,497	\$ 100,688(2)	\$191,185
Hans Mueller	\$47,000	\$81,597	—	\$128,597
William S. Reardon	\$53,500	\$74,318	—	\$127,818
Alison Taunton-Rigby	\$46,500	\$74,318	—	\$120,818
James B. Wyngaarden	\$73,500	\$74,318	—	\$147,818

- (1) The amount shown represents the amount of compensation cost that we recognized for financial statement reporting purposes for fiscal 2008 for all options held by each of the non-employee directors as computed in accordance with Statement of Financial Accounting Standards (SFAS) No. 123R utilizing the modified prospective transition method. In accordance with SFAS No. 123R, the fair value of each stock option is determined on the date of grant using the Black-Scholes option pricing model. This value is then amortized ratably over the vesting period. The amounts disregard the estimate of forfeitures related to service-based vesting conditions. See Note 2(k) of the financial statements in our annual report on Form 10-K for the year ended December 31, 2008 regarding assumptions we made in determining the SFAS No. 123R value of equity awards. The grant date fair value, computed in accordance with SFAS No. 123R, of stock options granted to each of our non-employee directors, except for Dr. Karr, in 2008 was \$210,437. The grant date fair value, computed in accordance with SFAS No. 123R, of stock options granted to Dr. Karr was \$201,064. As of December 31, 2008, our non-employee directors held options to purchase shares of our common stock as follows: Mr. El Zein: 47,752; Mr. Hartley: 49,127; Dr. Karr: 125,375; Dr. Mueller: 31,625; Mr. Reardon: 47,877; Dr. Taunton-Rigby: 45,063; Dr. Wyngaarden: 84,127.
- (2) Represents consulting fees paid to Dr. Karr pursuant to a consulting agreement between us and Dr. Karr.

PROPOSAL 2 — 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, 2009. Ernst & Young LLP has served as our independent auditors 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 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 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.

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, 2009.

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 six times during 2008, including regular, special and telephonic meetings. Each director who served as a director during 2008 attended at least 75% of the total number of board meetings held during 2008 and of the total number of meetings held by all board committees on which he or she served during 2008.

Our board of directors has established three standing committees — audit, compensation, and nominating and corporate governance — each of which operates under a charter that has been approved by our board of directors. Current copies of the charters for the audit, compensation and nominating and corporate governance committees are posted on our website, www.iderapharma.com, and can be accessed by clicking “Investors” and “Corporate Governance.”

Our board of directors has determined that all of the members of each of the audit, compensation and nominating and corporate governance committees are independent as defined under applicable NASDAQ rules including, in the case of all members of the audit committee, the independence requirements contemplated by Rule 10A-3 under the Securities Exchange Act of 1934.

Our board of directors has adopted corporate governance guidelines to assist our board in the exercise of its duties and responsibilities, which we have 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 registered public accounting firm;
- overseeing the work of our registered public accounting firm, including through the receipt and consideration of certain reports from such accounting firm;
- reviewing and discussing with management and the 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 registered public accounting firm and management; and
- preparing the audit committee report required by SEC rules that is included in the section of this proxy statement entitled “Report of the Audit Committee.”

The current members of our audit committee are William S. Reardon, C.P.A. (chairman), Hans Mueller, Ph.D. and Alison Taunton-Rigby, Ph.D. Our board of directors has determined that all three members of the audit committee are “audit committee financial experts” as defined in Item 407(d)(5) of Regulation S-K. During 2008, our audit committee held seven meetings in person or by teleconference.

Compensation Committee

Our compensation committee's responsibilities include:

- 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 other 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 our "Compensation Discussion and Analysis" required by the SEC's rules and included in this proxy statement; and
- preparing the compensation committee report required by SEC's rules, which is included in this proxy statement.

The current members of our compensation committee are James B. Wyngaarden M.D. (chairman), C. Keith Hartley, Dr. Mueller and Dr. Taunton-Rigby. During 2008, the compensation committee held seven 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 below under the headings "Proposal 1 — Election of Directors — Director Compensation" and "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 members of our nominating and corporate governance committee are Mr. Hartley (chairman), Mr. Reardon and Dr. Wyngaarden. During 2008, the nominating and corporate governance committee held four 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 Nominating Process."

Director Independence

Under applicable NASDAQ rules, 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 none of Mr. Hartley, Dr. Mueller, Mr. Reardon, Dr. Taunton-Rigby or Dr. Wyngaarden has a relationship which would interfere with the exercise of independent judgment in carrying out the responsibilities of a director and that each of these directors is an "independent director" as defined under Rule 4200(a)(15) of the NASDAQ Stock Market, Inc. Marketplace Rules.

Director Nominating 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 also utilizes a third party recruiting firm to identify and interview potential candidates.

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

Our nominating and corporate governance committee does not assign specific weights to particular criteria and no particular criterion is a prerequisite for any prospective nominee. We believe that the backgrounds and qualifications of our directors, considered as a group, should provide a composite 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 under "Information about the annual meeting — How and when may I submit a proposal for the 2010 annual meeting?" above. 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.

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 is primarily responsible

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for monitoring communications from stockholders and for providing copies or summaries to the other directors, as he or she considers appropriate.

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 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.

Director Attendance at Annual Meeting of Stockholders

Directors are expected to attend the annual meeting of stockholders. All directors attended the 2008 annual meeting of stockholders.

Compensation Committee Interlocks and Insider Participation

Our compensation committee currently consists of Dr. Wyngaarden, Mr. Hartley, Dr. Mueller and Dr. Taunton-Rigby. No member of our compensation committee was at any time during 2008, or was formerly, an officer or employee of ours. No member of our compensation committee engaged in any related person transaction involving our company. 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.

SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT

On January 31, 2009, we had 23,414,780 shares of common stock issued and outstanding. The following table sets forth information we know about the beneficial ownership of our common stock, as of January 31, 2009, by:

- each person known by us to own beneficially more than 5% of the outstanding shares of our common stock;
- each of our directors;
- each of our named executive officers; and
- all directors and executive officers as a group.

Name of Beneficial Owner(1)	Number of Shares Beneficially Owned (2)	Percentage of Common Stock Outstanding
5% Stockholders		
Felix J. Baker and Julian C. Baker(3) 667 Madison Avenue New York, NY 10021	2,174,210	9.3%
Merck & Co, Inc. One Merck Drive Whitehouse Station, NJ 08889	1,818,182	7.8%
Sudhir Agrawal, D. Phil.(4)	1,225,918	5.0%
Other Directors and Named Executive Officers		
Louis J. Arcudi, III(5)	36,686	*
Alice S. Bexon, MBChB(6)	33,125	*
Youssef El Zein(7)	584,922	2.5%
C. Keith Hartley(8)	75,145	*
Robert W. Karr, M.D.(9)	107,758	*
Hans Mueller, Ph.D.(6)	13,459	*
William S. Reardon(10)	33,874	*
Timothy M. Sullivan, Ph.D.(11)	125,925	*
Alison Taunton-Rigby, Ph.D.(6)	26,897	*
James B. Wyngaarden, M.D.(12)	102,646	*
All current directors and executive officers as a group (11 persons)(13)	2,366,355	9.5%

* Less than 1%

- (1) Except as otherwise noted, the address for each person listed above is c/o Idera Pharmaceuticals, Inc., 167 Sidney Street, Cambridge, Massachusetts 02139.
- (2) The number of shares beneficially owned by each person is determined under rules of the Securities and Exchange Commission, and the information is not necessarily indicative of beneficial ownership for any other purpose. Under such rules, beneficial ownership includes any shares as to which the stockholder has the sole or shared voting power or investment power and any shares that the stockholder has the right to acquire within 60 days after January 31, 2009 through the conversion of any convertible security or the exercise of any stock option, warrant or other right. Unless otherwise indicated, each stockholder has sole investment and voting power (or shares such power with his or her spouse) with respect to the shares set forth in the table. The inclusion of any shares deemed beneficially owned does not constitute an admission of beneficial ownership of such shares.
- (3) As reported on a Schedule 13G/A filed with the SEC on February 17, 2009. Set forth below is the aggregate number of shares of our common stock held as of December 31, 2008, including shares that maybe acquired upon the exercise of warrants, as of the date hereof by each of the following entities:

<u>Registered Holder</u>	<u>Shares of Common Stock</u>
Baker Brothers Life Sciences, L.P.	1,345,283
Baker Brothers Investments, L.P.	52,763
Baker Brothers Investments II, L.P.	61,224
667, L.P.	672,947
14159, L.P.	41,417
FBB Associates	576
Total	<u>2,174,210</u>

By virtue of their ownership of entities that have the power to control the investment decisions of the limited partnerships listed in the table above, Felix J. Baker and Julian C. Baker may each be deemed to be beneficial owners of shares owned by such entities and may be deemed to have shared power to vote or direct the vote of and shared power to dispose or direct the disposition of such securities.

- (4) Includes 1,093,026 shares of common stock subject to outstanding stock options that are exercisable within 60 days after January 31, 2009.
- (5) Includes 35,832 shares of common stock subject to outstanding stock options that are exercisable within 60 days after January 31, 2009.
- (6) Consists of shares of common stock subject to outstanding stock options that are exercisable within 60 days after January 31, 2009.
- (7) Includes 29,586 shares of common stock subject to outstanding stock options, which are exercisable within the 60 days after January 31, 2009. Also includes 316,420 shares that were subject to a pledge agreement in favor of Credit Suisse Securities (USA), LLC as of January 31, 2009. Also includes 316,420 shares that were subject to a pledge agreement in favor of Credit Suisse Securities (USA), LLC as of January 31, 2009, in connection with indebtedness in the aggregate amount of \$288,277.
- (8) Includes 30,961 shares of common stock subject to outstanding stock options that are exercisable within 60 days after January 31, 2009.
- (9) Includes 549 shares of common stock held by Robert W. Karr Revocable Trust. Mr. Karr disclaims beneficial ownership of all shares held in this trust. Also includes 107,209 shares of common stock subject to outstanding stock options that are exercisable within 60 days after January 31, 2009.
- (10) Includes 29,711 shares of common stock subject to outstanding stock options that are exercisable within 60 days after January 31, 2009.
- (11) Includes 105,467 shares of common stock subject to outstanding stock options that are exercisable within 60 days after January 31, 2009.
- (12) Includes 65,961 shares of common stock subject to outstanding stock options that are exercisable within 60 days following January 31, 2009.
- (13) Includes 1,571,234 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 January 31, 2009.

EXECUTIVE COMPENSATION Compensation Discussion and Analysis

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. We refer to these officers as “named executive officers.” Our compensation committee makes compensation decisions relating to our executive officers after consultation with our board of directors.

Overview of Compensation Program and Philosophy

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's overall compensation to key strategic, financial 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, 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.

In making compensation decisions, our compensation committee reviews compensation survey data provided by its compensation consultant, Radford Surveys + Consulting, specifically the Radford Global Life Science Survey, a survey of U.S. biotech companies generally, and the Radford Biotechnology Survey of U.S. companies with fewer than 50 employees. Although the compensation committee has from time to time in prior years reviewed data of a peer group of publicly traded companies that the committee believed to have business life cycles, growth profiles, market capitalizations, products, research and development investment levels and number/capabilities of employees that were roughly comparable to ours, the compensation committee did not use any such peer group in setting 2008 compensation.

Our compensation committee uses specific target percentiles from survey data as one factor along with the experience, performance levels, potential performance levels of the executive and changes in duties and responsibilities to set compensation. Our compensation committee intends that if an executive achieves the individual and company performance goals determined by the compensation committee, then the executive should have the opportunity to receive compensation that is competitive with industry norms. Therefore, the compensation committee considers the compensation levels of our executive officers in comparison to the percentiles from survey data for similarly situated executives.

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

- reviews executive officer performance in order to determine if individual goals are met at the end of the year;
- 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;
- holds executive sessions (without our management present);
- reviews survey information regarding the performance and executive compensation of other companies; and
- reviews all of the foregoing with the board of directors.

The compensation committee has implemented an annual performance review program for our executives, under which 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 and operational milestones. Annual and individual goals focus on contributions that facilitate the achievement of the corporate goals. Individual goals are proposed by each executive and approved by the chief executive officer. Individual goals are closely aligned with corporate goals. 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 compensation committee considers the achievement of these corporate and individual performance goals as one of the factors in determining annual salary increases, annual bonuses, and annual stock option awards granted to our executives.

Generally, at the end of each year, the compensation committee evaluates individual and corporate performance against the goals for the recently completed year. The chief executive officer prepares evaluations of the other executives and recommends annual executive salary increases, annual stock option awards and bonuses, if any, which are then reviewed and approved by the compensation committee. The compensation committee consults with the board of directors prior to approving compensation for executive officers. In the case of the chief executive officer, the compensation committee conducts his individual performance evaluation and determines his compensation changes and awards. For all executives, annual base salary increases are implemented during the first calendar quarter of the year. Any annual stock option awards and bonuses 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 all 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.

Elements of 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. 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 the company's cash resources, determines subjectively what it believes to be the appropriate level and mix of the various compensation components.

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

We entered into a multi-year employment agreement with our chief executive officer, Dr. Agrawal, in October 2005, and an employment offer letter with Louis J. Arcudi, III, our Chief Financial Officer, both of which were amended in 2008 to ensure compliance with Section 409A of the Internal Revenue Code of 1986, as amended. We also entered into an employment offer letter with Alice Bexon, our Vice President of Clinical Development. 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 reviews survey data provided by our compensation consultant, considers historic salary levels of the executive and the nature of the individual's responsibilities, compares the executive's base salary with those of our other executives and considers the individual's performance. The compensation committee also 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 performance.

In setting base salaries for 2008, which the compensation committee did in December 2007, the compensation committee reviewed industry survey materials presented by Radford Surveys + Consulting from the Radford Global Life Sciences Survey. After reviewing such data and taking into consideration the other items described in the preceding paragraph, the compensation committee determined to increase the 2008 base salary of each executive by approximately 4%, compared to his or her 2007 base salary, which reflected increases in the consumer price index for the New England area.

Mr. Arcudi joined us in December 2007. The compensation committee determined his salary based on a review of survey data for comparable positions, a review of his experience and prior compensation levels and our company's needs with respect to the position being filled, and negotiations between us and Mr. Arcudi in connection with his hiring.

At the end of 2008, the compensation committee set salaries for 2009, which, except for Mr. Arcudi, reflected increases of approximately 5% for our named executive officers reflecting a cost of living adjustment. The compensation committee increased Mr. Arcudi's base salary by 13%, based upon its review of his performance as well as its recognition that the compensation agreed upon when Mr. Arcudi was hired in late 2007 had been set at an amount lower than the 50th percentile for chief financial officers based on survey information, and the compensation committee's belief that, given his performance, his compensation should be at the 50th percentile for chief financial officers of comparable companies.

Cash Bonuses

The compensation committee generally structures cash bonuses by linking them to the achievement of specified company and individual performance objectives. The amount of the bonus paid, if any, varies among the executive officers depending on their success in achieving individual performance goals and their contribution to the achievement of corporate performance goals. The compensation committee reviews and assesses corporate goals and individual performance by executive officers and considers the reasons why specific goals have not been achieved. Corporate performance criteria that are considered by the compensation committee include performance with respect to development milestones, business development objectives, commercialization goals, financial goals and other measures of corporate performance. Our executive officers generally do not have bonus targets.

In determining the cash bonuses to be paid to each of the executive officers for services rendered in 2008, the compensation committee reviewed data from the Radford Global Life Sciences Survey. Corporate goals for 2008 were established in six categories: science, intellectual property, drug development, financial management, business development and corporate development. The committee worked with our chief executive officer to determine these goals, which were designed to be challenging goals that the committee believed could be reasonably achieved in 2008.

In determining Dr. Agrawal's cash bonus, the compensation committee also considered that we had agreed in Dr. Agrawal's employment agreement to pay him a bonus of between 20% and 70% of his base salary for 2008. The compensation committee granted a 2008 bonus of 70% of Dr. Agrawal's base salary. In reviewing Mr. Arcudi's performance, the compensation committee also considered that we had agreed in his employment offer letter to pay him a bonus in 2008 between 20% to 30% of his base salary as well as the recognition noted above that his initial compensation when he was hired in late 2007 was relatively low.

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 interest 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, which is typically quarterly over four years. In determining the size of equity awards to our executives, our compensation committee considers our company-level performance, the applicable executive's previous awards, the recommendations of management and the survey information received from the compensation consultant.

Our equity awards have typically taken the form of stock options. However, under the terms of our stock incentive plans, we may grant, and from time to time we have granted, 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 executives. The compensation committee reviews all components of the executive's compensation when determining annual equity awards to ensure that an executive's total compensation conforms to our overall philosophy and objectives.

The compensation committee typically makes initial stock option awards to new executives and annual stock option awards as part of our overall compensation program. 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.

Equity awards to our named executive officers are typically granted annually in conjunction with the review of their individual performance. This review typically occurs at the regularly scheduled meeting of the compensation committee held in the fourth quarter of each year.

In December 2008, the compensation committee made annual awards for 2008 to each of our executive officers. We granted Dr. Agrawal an option to purchase 200,000 shares, Mr. Arcudi an option to purchase 40,000 shares, Dr. Bexon an option to purchase 10,000 shares and Dr. Sullivan an option to purchase 35,000 shares. In determining these option awards, the compensation committee considered the performance of each executive officer during 2008 and data from the Radford Global Life Science Survey.

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 2008, 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. Each of our named executive officers contributed to our 401(k) plan and their contributions were matched by us.

We occasionally pay relocation expenses for newly hired executive officers whom 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 2008, Drs. Bexon, and Sullivan received reimbursement for local housing expenses and associated travel costs. Each of Drs. Bexon and Sullivan maintains a primary residence outside of a reasonable daily commuting range to our headquarters.

Our named executive officers also may participate in our employee stock purchase program, 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. Two of our named executive officers, Mr. Arcudi and Dr. Sullivan, participated in the employee stock purchase program during 2008.

Severance and Change-in-Control Benefits

We currently have an employment agreement with Dr. Agrawal and an employment offer letter 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.

We believe providing these benefits helps us compete for executive talent. We believe providing severance and change-in-control benefits are a component that can help us 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 our independent compensation consultant, we believe that our severance and change-in-control benefits are appropriate.

Compliance with Internal Revenue Code Section 162(m).

Section 162(m) of the Internal Revenue Code generally disallows a tax deduction to public companies for certain compensation in excess of \$1 million paid to our chief executive officer and the other officers whose compensation is required to be disclosed under the Exchange Act by reason of being among our four most highly compensated officers. Certain compensation, including qualified performance-based compensation, will not be subject to the deduction limit if specified requirements are met. In general, we structure and administer our stock option plans in a manner intended to comply with the performance-based exception to Section 162(m). Nevertheless, there can be no assurance that compensation attributable to future awards granted under its plans will be treated as qualified performance-based compensation under Section 162(m). In addition, 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.

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,

James B. Wyngaarden, *Chairman*
C. Keith Hartley
Hans Mueller
Alison Taunton-Rigby

Summary Compensation Table

The table below summarizes compensation paid to or earned by our named executive officers. Our named executive officers have no non-equity incentive plan compensation, defined benefit pension or non-qualified compensation to report for 2008, 2007 or 2006.

Summary Compensation Table For Fiscal Year 2008

Name and Principal Position	Year	Salary	Bonus	Stock Awards	Option Awards	All Other Compensation	Total
		(\$)	(\$)	(\$)	(\$)	(\$)	(\$)
Sudhir Agrawal, D. Phil. President, Chief Executive Officer and Chief Scientific Officer	2008	\$485,000	\$340,000(4)	\$ 146,876	\$579,227	\$26,145	\$1,577,248
	2007	\$463,000	\$500,000(4)	\$ 73,500	\$408,822	\$22,227	\$1,467,549
	2006	\$445,000	\$450,000(4)	—	\$284,788	\$30,217	\$1,210,005
Louis J. Arcudi, III(5) Chief Financial Officer, Treasurer and Secretary	2008	\$230,000	\$110,000(6)	—	\$215,412	\$24,791	\$ 580,203
	2007	\$ 19,167	—	—	\$ 16,326	\$ 1,243	\$ 36,736
Alice S. Bexon, MBChB(7) Vice President of Clinical Development	2008	\$201,531	\$ 76,000(8)	—	\$176,697	\$12,276	\$ 466,504
	2007	\$273,125	\$190,000(9)	—	\$132,616	\$21,087	\$ 628,703
Timothy M. Sullivan, Ph.D. Vice President, Development Programs	2008	\$265,000	\$ 55,000	—	\$118,980	\$41,014	\$ 479,994
	2007	\$253,800	\$ 50,000	—	\$ 82,986	\$34,907	\$ 421,693
	2006	\$235,000	\$ 50,000	—	\$ 72,213	\$32,241	\$ 389,454

(1) Represents the amount of compensation cost that we recognized for financial statement reporting purposes for fiscal year 2008 with respect to restricted stock awarded in fiscal year 2007. In accordance with SFAS No. 123(R), the grant date fair value, which is determined by multiplying the total number of shares of restricted stock by the closing price of our company's common stock on the grant date, is amortized ratably over the vesting period.

(2) Represents the amount of compensation cost that we recognized for financial statement reporting purposes for fiscal year 2008 with respect to stock options granted in fiscal year 2008 and previous fiscal years, as computed in accordance with SFAS No. 123R. In accordance with SFAS No. 123R, the fair value of each stock option is determined on the date of grant using the Black-Scholes option pricing model. This value is then amortized ratably over the vesting period. The amounts disregard the estimate of forfeitures related to service-based vesting conditions. See Note 2(k) of the financial statements in our annual report on Form 10-K for the year ended December 31, 2008 regarding assumptions we made in determining the SFAS 123R value of equity awards.

(3) "All Other Compensation" for 2008 for each of the named executive officers includes the following:

	Dr. Agrawal	Mr. Arcudi	Dr. Sullivan	Dr. Bexon
Reimbursement for housing and associated travel expenses	—	—	\$ 15,817	\$ 3,656
Company match on 401(k)	\$ 6,900	\$ 6,900	\$ 6,900	\$ 6,046
Premiums paid by us for all insurance plans	\$ 19,245	\$ 17,891	\$ 18,297	\$ 2,574

(4) Under our employment agreement with him, Dr. Agrawal is entitled to 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. For 2008, 2007 and 2006, 70% of Dr. Agrawal's salary was \$339,500, \$324,100 and \$311,500, respectively. For further discussion of Dr. Agrawal's bonus, please see "Compensation Discussion and Analysis-Cash Bonuses" above.

(5) Mr. Arcudi joined us as Chief Financial Officer in December 2007.

(6) Includes a signing bonus of \$50,000 that we agreed to pay Mr. Arcudi in two equal installments on January 31, 2008 and May 30, 2008 pursuant to his employment offer letter.

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- (7) Dr. Bexon joined us as Vice President of Clinical Development in January 2007. In May 2008, Dr. Bexon's work schedule was reduced.
- (8) Includes a signing bonus of \$40,000 that we agreed to pay Dr. Bexon on the first anniversary of her commencement of employment pursuant to her employment offer letter.
- (9) Includes a \$60,000 signing bonus, which was paid in January 2007 when Dr. Bexon's employment commenced, and a \$60,000 signing bonus, which was paid in July 2007 on her six-month anniversary of employment, that we agreed to pay Dr. Bexon pursuant to her employment offer letter.

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.

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. In December 2008, in order to ensure compliance with Section 409A of the Internal Revenue Code, we entered into amendments to our employment agreements with Dr. Agrawal and with Mr. Arcudi. The amendments did not affect the scope or amount of benefits Dr. Agrawal and Mr. Arcudi are entitled to receive under their respective agreements.

Sudhir Agrawal, D. Phil.

We are a party to an employment agreement with Dr. Sudhir Agrawal, our president, chief executive officer and chief scientific officer. Under the agreement, we agreed to continue to employ Dr. Agrawal for a term originally ending on October 19, 2008. The employment term is automatically extended for an additional 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 October 19, 2008, the term was extended to October 19, 2011.

Under the agreement, Dr. Agrawal is currently entitled to receive an annual base salary of \$510,000 or such higher amount as our compensation committee or our board of directors may determine, and 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.

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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, 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, we will vest all unvested stock options held by Dr. Agrawal in full.

If required by Section 409A of the Internal Revenue 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 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

In connection with our hiring of Mr. Arcudi, we agreed in his employment offer letter:

- that he would be eligible for a bonus equal to between 20% and 30% of his base salary for 2008; and
- to pay Mr. Arcudi a signing bonus of \$50,000 payable in two equal installments on January 31, 2008 and May 30, 2008.

We also agreed that, if we terminate Mr. Arcudi's employment without cause, to pay Mr. Arcudi three months severance and continue his medical and dental insurance. Our obligation to make the severance payments and provide continuation of benefits is contingent upon Mr. Arcudi's execution of a release in a form reasonably acceptable to us. If required by Section 409A of the Internal Revenue 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.

Alice S. Bexon, MBChB

In connection with our hiring of Dr. Bexon, we agreed in her offer letter that she would be eligible for a bonus of up to 25% of her base salary. We also agreed to pay her a \$60,000 signing bonus on the commencement of her employment, a \$60,000 signing bonus on her six-month anniversary of employment and a \$40,000 bonus on her first anniversary of employment.

Grants of Plan-Based Awards

The following table sets forth information regarding stock options granted to each named executive officer during 2008.

Grants of Plan-Based Awards for Fiscal Year 2008

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.	1/2/2008	125,000	\$ 13.28	\$ 946,513
	12/16/2008	200,000	\$ 8.70	\$ 955,100
Louis J. Arcudi, III	12/16/2008	40,000	\$ 8.70	\$ 191,020
	1/2/2008	20,000	\$ 13.28	\$ 151,442
Alice S. Bexon, MBChB	12/16/2008	10,000	\$ 8.70	\$ 47,755
	1/2/2008	25,000	\$ 13.28	\$ 189,303
Timothy M. Sullivan, Ph.D.	12/16/2008	35,000	\$ 8.70	\$ 167,143

- (1) The stock options granted to each of the named executive officers listed above were granted pursuant to our 2005 Stock Incentive Plan and our 2008 Stock Incentive Plan. The term of these options is ten years. The stock options vest over four years from the date of grant, in equal quarterly installments. See "Agreements with our Named Executive Officers" for further information about acceleration of vesting of Dr. Agrawal's options in connection with the termination of his employment and in the event of a change of control.
- (2) The option-related amounts represent the grant date fair value, computed in accordance with SFAS No. 123R of stock options granted to the named executive officers in 2008. In accordance with SFAS No. 123R, the grant date fair value of the stock options is determined on the date of grant using Black-Scholes option pricing model. See Note 2(k) of the consolidated financial statements in our annual report on Form 10-K for the year ended December 31, 2008 regarding assumptions we made in determining the SFAS 123R value of equity awards.

Outstanding Equity Awards At Fiscal Year-End

The following table sets forth information regarding the outstanding stock options and restricted stock awards held by our named executive officers as of December 31, 2008.

Outstanding Equity Awards At Fiscal Year-End for 2008

Name	Option Awards				Stock Awards	
	Number of Securities Underlying Unexercised Options (#)	Number of Securities Underlying Unexercised Options (#)	Option Exercise Price(\$)	Option Expiration Date	Number of Shares or Units of Stock That Have Not Vested (#)	Market Value of Shares or Units of Stock That Have Not Vested (\$)
	Exercisable	Unexercisable				
Sudhir Agrawal, D. Phil.(1)	62,500	—	\$ 8.50	1/1/2010		
	62,500	—	\$ 8.50	1/1/2011		
	243,751	—	\$ 4.50	3/28/2011		
	47,718	—	\$ 8.50	4/2/2011		
	288,750	—	\$ 6.60	7/25/2011		
	31,250	—	\$ 4.16	11/30/2014		
	125,000	—	\$ 4.48	5/12/2015		
	50,000	—	\$ 5.76	6/1/2015		
	28,125(2)	9,375(2)	\$ 4.24	12/15/2015		
	70,834(3)	54,166(3)	\$ 5.10	12/14/2016		
	23,702(4)	38,798(4)	\$ 7.05	6/25/2017	41,667	\$320,003(10)
	23,437(5)	101,563(5)	\$13.28	1/2/2018		
Louis J. Arcudi, III	26,677(7)	200,000(6)	\$ 8.70	12/16/2018		
		53,333(7)	\$12.25	12/3/2017		
Alice S. Bexon, MBChB	20,626(8)	41,875(8)	\$ 7.55	1/16/2017		
	3,750(5)	16,250(5)	\$13.28	1/2/2018		
Timothy M. Sullivan, Ph.D.		10,000(6)	\$ 8.70	12/16/2018		
	7,500	—	\$11.28	3/25/2012		
	3,750	—	\$ 6.24	12/12/2012		
	5,625	—	\$ 8.96	12/16/2013		
	58,750	—	\$ 4.16	11/30/2014		
	9,375(2)	3,125(2)	\$ 4.24	12/15/2015		
	10,000(9)	10,000(9)	\$ 5.10	12/14/2016		
4,687(5)	20,313(5)	\$13.28	1/2/2018			
	35,000(6)	\$ 8.70	12/16/2018			

- (1) In accordance with the terms of our employment agreement with Dr. Agrawal unvested stock options vest in full upon a change in control of our company. See "Agreements with our Named Executive Officers" for more information.
- (2) 6.25% of the shares subject to this option vest quarterly from the date of grant until December 15, 2009 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) 50,000 of the shares subject to this option vest quarterly from the date of grant until December 14, 2009 and 75,000 of the shares subject to this option vest quarterly from the date of grant until December 14, 2010, 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.

- (4) 25% of the shares subject to this option vested on June 25, 2008, the first anniversary of the date of grant, and the remaining 75% vest in 12 equal quarterly installments commencing on September 25, 2008 until June 25, 2011. The total number of shares subject to the option equals the sum of the figures in the exercisable and unexercisable columns.
- (5) 6.25% of the shares subject to this option vest quarterly from the date of grant until January 2, 2012 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.
- (6) 6.25% of the shares subject to this option vest quarterly from the date of grant until December 16, 2012 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.
- (7) One-third of the shares subject to this option vested on December 3, 2008 and the remainder will vest in equal quarterly installments beginning on March 3, 2009 until December 3, 2010 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.
- (8) The total number of shares subject to the option was 90,000, of which 27,499 shares have been exercised. Of the original 90,000 shares subject to the option: 6,875 vested every January 16, April 16, July 16 and October 16, beginning on April 16, 2007 through October 16, 2008, 6,875 will vest on January 16, 2009, and 4,375 will vest April 16, July 16 and October 16, 2009 and January 16, April 16, July 16 and October 16, 2010 until fully vested on January 16, 2011.
- (9) 6.25% of the shares subject to this option vest quarterly from the date of grant until December 14, 2010 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.
- (10) This amount was determined by multiplying the total number of unvested shares of our common stock underlying the restricted stock by \$7.68, the closing price of our common stock on December 31, 2008.

Option Exercises and Stock Vested

The following table sets forth information regarding the exercise of options and stock vested by our named executive officers during 2008.

Option Exercise and Stock Vested For Fiscal Year 2008

Name	Option Awards		Stock Awards	
	Number of Shares Acquired on Exercise (#)	Value Realized on Exercise (\$)(1)	Number of Shares Acquired on Vesting (#)	Value Realized on Vesting (\$)(2)
Sudhir Agrawal, D. Phil	124,999	\$ 961,306	20,833	\$ 300,829
Louis J. Arcudi, III	—	—	—	—
Alice S. Bexon, MBChB	27,499	\$ 53,082	—	—
Timothy M. Sullivan, Ph.D.	—	—	—	—

- (1) The value realized on exercise was calculated by multiplying the number of shares acquired on exercise by the difference between the market price of the underlying securities at exercise and the exercise price of the options. The market price at exercise represents the closing market price of our common stock on the date of exercise or the sales price if the options were exercised and sold.
- (2) Represents the fair value as of the vesting date.

Potential Payments under Termination or Change in Control

We have an employment agreement with Dr. Agrawal that provides for severance benefits 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. Bexon nor Dr. Sullivan is entitled to any severance benefits following a termination of her or his employment with our company.

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 the company). These disclosed amounts assume that the named executive officers’ employment terminated on December 31, 2008, are estimates only and do 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
Change in Control**

Name	Severance Payments (\$)	Bonus Amount (\$)	Value of Accelerated Vesting of Stock Options (\$)	Value of Continuation of Benefits \$(1)	Total (\$)
Sudhir Agrawal, D. Phil.(2)	\$970,000	\$500,000	\$511,521(3)	\$ 38,490	\$2,020,011
Louis J. Arcudi, III(4)	\$ 57,500	—	—	\$ 4,473	\$ 61,973
Alice S. Bexon, MBChB	—	—	—	—	—
Timothy M. Sullivan, Ph.D.	—	—	—	—	—

- (1) 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, 2008. Under our employment agreement with Dr. Agrawal, we will pay benefits continuation following a termination by Dr. Agrawal for good reason or a termination by us other than for death, disability or cause. Under our employment offer letter with Mr. Arcudi, we will pay benefits continuation following a termination by us without cause.
- (2) Severance payments will only be paid to Dr. Agrawal following termination by him for good reason or following termination by us other than for death, disability or cause. Dr. Agrawal would be entitled to the pro rata portion of the bonus earned for the prior fiscal year — in this case, 2007. This amount does not include any bonus that would otherwise be paid for 2008. We will pay the bonus following termination upon Dr. Agrawal’s death or disability, termination by us without cause or termination by Dr. Agrawal for good reason. If Dr. Agrawal’s employment were terminated upon his death or disability the value of the accelerated vesting of his stock options and restricted stock would be \$516,444. Upon termination of Dr. Agrawal’s employment for death or disability the vesting of options and restricted stock through the remainder of the employment term would be accelerated.
- (3) This amount equals the difference between the exercise price of each “in the money” option and \$7.68, the closing price of our common stock on December 31, 2008, multiplied by the number of options that would vest as a result of the accelerated vesting provided for under the employment agreement plus \$7.68 multiplied by the number of shares of restricted stock that would vest as a result of the accelerated vesting under the employment agreement.
- (4) Severance payments will only be paid to Mr. Arcudi following termination by us without cause.

Under Dr. Agrawal’s employment agreement, he would be entitled to receive the estimated benefits shown in the table below if his employment were terminated in connection with or within one year after a change in control. None of our other named executives is entitled to any severance or other benefits if his or her employment is terminated in connection with or following a change of control. These disclosed amounts are estimates only and do not necessarily reflect the actual amounts that would be paid to Dr. Agrawal, which would only be known at the time that he becomes eligible for payment and would only be payable if a change in control were to occur. The table below reflects the amount that could be payable under the various arrangements assuming that the change in control occurred on December 31, 2008 and Dr. Agrawal’s employment was immediately terminated. Under such hypothetical, no payments made in connection with a change-in-control of our company would be subject to

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the excise tax imposed by Section 4999 of the Code; as a result, we would not be required to make any gross-up payments to Dr. Agrawal.

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

Name	Severance Payments \$(1)	Bonus Amount \$(1)	Value of Accelerated Vesting of Stock Options \$(2)	Value of Continuation of Benefits \$(3)	Total (\$)
Sudhir Agrawal, D. Phil	\$970,000	\$ 500,000	\$ 516,444	\$ 38,490	\$2,024,934

- (1) Severance payments and bonus will only be paid following termination by the named executive officer for good reason or termination by us other than for death, disability or cause.
- (2) This amount equals the difference between the exercise price of each "in the money" option and \$7.68, the closing price of our common stock on December 31, 2008, multiplied by the number of options that would vest as a result of the accelerated vesting provided for under the employment agreements plus \$7.68 multiplied by the number of shares of restricted stock that would vest as a result of the accelerated vesting under the employment agreement. Upon a change of control, the vesting of all Dr. Agrawal's unvested options and restricted stock will accelerate.
- (3) Represents the estimated cost to us of continuing Dr. Agrawal's healthcare, disability, life and dental insurance benefits for the applicable severance period based on our costs for such benefits at December 31, 2008.

**SECURITIES AUTHORIZED FOR ISSUANCE UNDER OUR
EQUITY COMPENSATION PLAN INFORMATION**

The following table provides information about our common stock that may be issued upon exercise of options, warrants and rights under all of our equity compensation plans as of December 31, 2008.

Equity Compensation Plan Information

Plan Category	Number of Securities to be Issued Upon Exercise of Outstanding Options, Warrants and Rights (a)	Weighted-Average Exercise Price of Outstanding Options, Warrants and Rights (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)	3,228,089	\$ 8.02	3,171,590
Equity compensation plans not approved by stockholders(2)	324,662	\$ 6.81	—
Total	3,552,751	\$ 7.91	3,171,590

(1) Includes our:

- 1995 Stock Option Plan;
- 1995 Employee Stock Purchase Plan;
- 1995 Director Stock Option Plan;
- 1997 Stock Incentive Plan;
- 2005 Stock Incentive Plan; and our
- 2008 Stock Incentive Plan.

Shares are available for future issuance only under our 1995 Employee Stock Purchase Plan and our 2008 Stock Incentive Plan.

(2) Consists of non-statutory stock option agreements issued to Dr. Sudhir Agrawal, effective as of April 2, 2001 and July 25, 2001.

Non-Statutory Stock Option Agreements with Dr. Agrawal

In 2001, we granted Dr. Agrawal four non-statutory stock options outside of any equity compensation plan approved by our stockholders, as follows:

- A non-statutory stock option agreement providing for the purchase of 157,500 shares of common stock at an exercise price of \$6.60 per share;
- A non-statutory stock option agreement providing for the purchase of 68,750 shares of common stock at an exercise price of \$6.60 per share;
- A non-statutory stock option agreement providing for the purchase of 62,500 shares of common stock at an exercise price of \$6.60 per share; and
- A non-statutory stock option agreement providing for the purchase of 35,912 shares of common stock at an exercise price of \$8.504 per share.

These options have a term of ten years and are now fully vested. Subject to the terms of Dr. Agrawal's employment agreement with us, unless we terminate his employment for cause or he voluntarily resigns, these options are exercisable at any time prior to the earlier of the date that is 24 months after the termination of Dr. Agrawal's relationship with us and the option expiration date. If we terminate Dr. Agrawal's employment for cause or he voluntarily resigns, then the options will be exercisable at any time prior to the earlier of the date that is 12 months after the termination of Dr. Agrawal's relationship with us and the option expiration date.

ACCOUNTING MATTERS Report of the Audit Committee

The audit committee has reviewed our audited financial statements for the fiscal year ended December 31, 2008 and discussed them with our management and our registered public accounting firm.

The audit committee has also received from, and discussed with, our registered public accounting firm various communications that our registered public accounting firm is required to provide to the audit committee, including the matters required to be discussed by the Statement on Auditing Standards No. 61, as amended (AICPA, *Professional Standards*, Vol. 1, AU section 380), as adopted by the Public Company Accounting Oversight Board in Rule 3200T.

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 the independent auditors' 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, 2008.

By the audit committee of the board of directors,

William S. Reardon, *Chairman*
Hans Mueller
Alison Taunton-Rigby

Registered Public Accounting Firm Fees

We paid Ernst & Young LLP a total of \$500,683 for professional services rendered for the year ended December 31, 2008 and \$460,587 for professional services rendered for the year ended December 31, 2007. The following table provides information about these fees.

Fee Category	2008	2007
Audit Fees	\$404,346	\$394,204
Audit-Related Fees	35,337	23,023
Tax Fees	59,500	41,860
All Other Fees	1,500	1,500
Total Fees	<u>\$500,683</u>	<u>\$460,587</u>

Audit Fees

Audit fees consist of fees for the audit of our financial statements, the audit of our internal control over financial reporting, 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 consisted 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 audits of our employee benefit plans and consultations regarding internal controls, financial accounting and reporting standards.

Tax Fees

Tax fees consisted of fees for tax compliance, tax advice and tax planning services. Tax compliance services, which relate to preparation of tax returns, accounted for \$19,000 of the total tax fees billed in 2008 and \$18,500 of the total tax fees billed in 2007. Tax advice and tax planning services relate to tax advice related to our net operating losses, collaboration agreements and stock option exercises.

All Other Fees

During fiscal 2008 and 2007, all other fees related to our subscription to Ernst & Young's online accounting and auditing research tool. Ernst & Young LLP did not collect fees for any other services for 2007 or 2008.

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 registered public accounting firm. This policy generally provides that we will not engage our 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 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.

RELATED PARTY 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 Stock Market 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 owner 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.

Since January 1, 2008, except as discussed below regarding Merck & Co., Inc., a greater than 5% stockholder, we have not entered into or engaged in any related party transactions 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 the transaction described below were no less favorable than those that we could have obtained from unaffiliated third parties.

Merck & Co., Inc.

In December 2006, we entered into an exclusive license and research collaboration agreement with Merck & Co., Inc. to research, develop and commercialize vaccine products containing our agonist compounds targeting toll-like receptors, or TLR, 7, 8 and 9 in the licensed fields of oncology, infectious diseases and Alzheimer's disease. In 2008, Merck & Co. sponsored approximately \$1.5 million of our research and development activities and we earned milestone revenue of \$1.0 million under our collaboration with Merck.

Under the terms of the agreement, we granted Merck worldwide exclusive rights to a number of our agonist compounds targeting TLR 7, 8 and 9 for use in combination with Merck's therapeutic and prophylactic vaccines under development in the licensed fields. There is no limit to the number of vaccines to which Merck can apply our agonists within the licensed fields. In addition, we agreed that we would not develop or commercialize, either directly or through a third party, any agonist targeting TLR 7, 8 or 9 for use in connection with vaccine products in the licensed fields. We also agreed with Merck to engage in a two-year research and development collaboration to generate novel agonists targeting TLR 7 and TLR 8 and incorporating both Merck and our chemistry for use in the licensed fields. Merck may extend the collaboration for two additional one-year periods. In November 2008, Merck extended this research collaboration for an additional one-year period to December 2009.

Under the terms of the agreement:

- Merck paid us a \$20 million upfront license fee;
- Merck purchased 1,818,182 shares of our common stock for a price of \$5.50 per share resulting in an aggregate purchase price of \$10 million;
- Merck agreed to fund the research and development collaboration;
- Merck agreed to pay us milestone payments as follows:
 - up to \$165 million if vaccines containing our TLR 9 agonist compounds are successfully developed and marketed in each of the oncology, infectious disease and Alzheimer's disease fields;
 - up to \$260 million if vaccines containing our TLR 9 agonist compounds are successfully developed and marketed for follow-on indications in the oncology field and if vaccines containing our TLR 7 and 8 agonists are successfully developed and marketed in each of the oncology, infectious disease and Alzheimer's disease fields; and
 - if Merck develops and commercializes additional vaccines using our agonists, we would be entitled to receive additional milestone payments.
- Merck agreed to pay us royalties on net product sales of vaccines using our TLR agonist technology that are developed and marketed.

Under the research and collaboration agreement, Merck is obligated to pay us royalties, on a product-by-product and country-by-country basis, until the later of the expiration of the patent rights licensed to Merck and the expiration of regulatory-based exclusivity for the vaccine product. If the patent rights and regulatory-based exclusivity expire in a particular country before the 10th anniversary of the product's first commercial sale in such

country, Merck will continue to pay us royalties at a reduced royalty rate until such anniversary, except that Merck's royalty obligation will terminate upon the achievement of a specified market share in such country by a competing vaccine containing an agonist targeting the same toll-like receptor as that targeted by the agonist in the Merck vaccine. In addition, the applicable royalties may be reduced if Merck is required to pay royalties to third parties for licenses to intellectual property rights, which royalties exceed a specified threshold. Merck's royalty and milestone obligations may also be reduced if Merck terminates the agreement based on specified uncured material breaches by us. The agreement may be terminated by either party based upon specified uncured breaches by the other party or by Merck at any time after providing us with advance notice of termination.

Merck has agreed that, during the balance of the research and collaboration term, its ability to sell the shares we issued to it will be subject to specified volume limitations. We also entered into a registration rights agreement with Merck and filed a registration statement with the SEC registering the resale of the shares of common stock issued and sold to Merck.

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 2008 all filings required to be made by such individuals or entities were timely made in accordance with the Exchange Act, except that Youssef El Zein, Hans Mueller, C. Keith Hartley, William Reardon, Alison Taunton-Rigby and James B. Wyngaarden failed to timely file Form 4 in connection with transactions effected on January 1, 2008, Mr. El Zein failed to timely file a Form 4 in connection with a transaction effected on June 16, 2008 and Mr. Reardon failed to timely file a Form 4 in connection with a transaction effected on January 2, 2008.

By order of the board of directors,

/s/ LOUIS J. ARCUDI, III
Louis J. Arcudi, III, *Secretary*

April 30, 2009

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THIS PROXY WHEN PROPERLY EXECUTED WILL BE VOTED IN THE MANNER DIRECTED BY THE UNDERSIGNED STOCKHOLDER(S). IF NO INDICATION IS MADE, THE PROXIES SHALL VOTE "FOR" THE DIRECTOR NOMINEES AND "FOR" PROPOSAL NUMBER 2.

Please mark your votes as indicated in this example.

A VOTE FOR THE DIRECTOR NOMINEES AND FOR PROPOSAL NUMBER 2 IS RECOMMENDED BY THE BOARD OF DIRECTORS.

FOR WITHHELD *EXCEPTIONS
1. Election of Class II Directors

Nominees:
01 Dr. Robert Karr
02 Dr. James Wyngaarden

FOR AGAINST ABSTAIN
2. Ratification of the selection of Ernst & Young LLP as our independent registered public accountants

In their discretion, the proxies are authorized to vote upon such other business as may properly come before the Annual Meeting or any adjournment thereof.

(INSTRUCTIONS: To withhold authority to vote for any individual nominee, mark the "Exceptions" box and write that nominee's name in the space provided below.)

* Exceptions _____

PLEASE BE SURE TO SIGN AND DATE THIS PROXY

Mark here for Address Change or Comments
SEE REVERSE

Signature _____ Signature _____ Date _____

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.

FOLD AND DETACH HERE

WE ENCOURAGE YOU TO TAKE ADVANTAGE OF INTERNET OR TELEPHONE VOTING, BOTH ARE AVAILABLE 24 HOURS A DAY, 7 DAYS A WEEK.

Internet and telephone voting is available through 11:59 PM Eastern Time the day prior to annual meeting day.

Idera Pharmaceuticals, Inc.

INTERNET
<http://www.proxyvoting.com/IDRA>
Use the Internet to vote your proxy. Have your proxy card in hand when you access the web site.

OR
TELEPHONE
1-866-540-5760
Use any touch-tone telephone to vote your proxy. Have your proxy card in hand when you call

If you vote your proxy by Internet or by telephone, you do NOT need to mail back your proxy card.

To vote by mail, mark, sign and date your proxy card and return it in the enclosed postage-paid envelope.

Your Internet or telephone vote authorizes the named proxies to vote your shares in the same manner as if you marked, signed and returned your proxy card.

IDERA PHARMACEUTICALS, INC.

PROXY SOLICITED BY THE BOARD OF DIRECTORS

Annual Meeting of Stockholders — June 16, 2009

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 2009 Annual Meeting of Stockholders of Idera Pharmaceuticals, Inc. and at any adjournments 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 thereof will not be deemed to revoke this proxy unless those signing on the reverse side shall revoke this proxy in writing.

Address Change/Comments (Mark the corresponding box on the reverse side)

BNY MELLON SHAREOWNER SERVICES
P.O. BOX 3550
SOUTH HACKENSACK, NJ 07606-9250

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

FOLD AND DETACH HERE