



ALNYLAM PHARMACEUTICALS, INC.
300 THIRD STREET
CAMBRIDGE, MASSACHUSETTS 02142

NOTICE OF 2014 ANNUAL MEETING OF STOCKHOLDERS
To Be Held On September 25, 2014

To our Stockholders:

NOTICE IS HEREBY GIVEN that the 2014 Annual Meeting of Stockholders of Alnylam Pharmaceuticals, Inc. will be held on Thursday, September 25, 2014 at 9:00 a.m., Eastern Time, at the offices of Alnylam Pharmaceuticals, Inc., 300 Third Street, Cambridge, Massachusetts. At the meeting, stockholders will consider and act on the following matters:

1. To elect three (3) members to our board of directors, as nominated by our board of directors, each to serve as a Class I director for a term ending in 2017, or until a successor has been duly elected and qualified;
2. To approve, on a non-binding advisory basis, the compensation of our named executive officers, as described in the "Compensation Discussion and Analysis," executive compensation tables and accompanying narrative disclosures in this proxy statement;
3. To ratify the appointment of PricewaterhouseCoopers LLP, an independent registered public accounting firm, as our independent auditors for the fiscal year ending December 31, 2014; and
4. To transact any other business that may properly come before the annual meeting or any adjournment or postponement thereof.

Proposal 1 relates solely to the election of three (3) Class I directors nominated by our board of directors and does not include any other matters relating to the election of directors, including without limitation, the election of directors nominated by any stockholder of the company.

Stockholders of record at the close of business on August 15, 2014, the record date for the annual meeting, are entitled to notice of, and to vote at, the annual meeting or any adjournment or postponement thereof. Your vote is important regardless of the number of shares you own. All stockholders are cordially invited to attend the annual meeting in person. However, to assure your representation at the annual meeting, if you are a stockholder of record, please vote in one of these three ways:

- **Vote Over the Internet**, by going to the website of our tabulator, Computershare Trust Company, N.A., at www.investorvote.com/ALNY and following the instructions for Internet voting shown on the enclosed proxy card;
- **Vote by Telephone**, by calling 1-800-652-VOTE (8683) and following the recorded instructions; or
- **Vote by Mail**, by completing and signing your enclosed proxy card and mailing it in the enclosed postage prepaid envelope. If you vote over the Internet or by telephone, please do not mail your proxy.

If your shares are held in "street name," that is, held for your account by a broker or other nominee, you will receive instructions from the holder of record that you must follow for your shares to be voted.

We encourage all stockholders to attend the annual meeting in person. If you vote via the Internet or by telephone or mail your proxy in, you will not limit your right to vote in person at the annual meeting. You may obtain directions to the location of the annual meeting on our website at www.alnylam.com. Whether or not you plan to attend the annual meeting in person, we hope you will take the time to vote your shares.

By Order of the Board of Directors

A handwritten signature in black ink, appearing to read "J. Maraganore", with a long horizontal line extending to the right.

John M. Maraganore, Ph.D.
Chief Executive Officer

Cambridge, Massachusetts
April 29, 2014

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ALNYLAM PHARMACEUTICALS, INC.
300 THIRD STREET
CAMBRIDGE, MASSACHUSETTS 02142

PROXY STATEMENT

**for the 2014 Annual Meeting of Stockholders
to be held on September 25, 2014**

This proxy statement and the enclosed proxy card are being furnished in connection with the solicitation of proxies by the board of directors of Alnylam Pharmaceuticals, Inc. for use at the 2014 Annual Meeting of Stockholders to be held on Thursday, September 25, 2014 at 9:00 a.m., Eastern Time, at the offices of Alnylam Pharmaceuticals, Inc., 300 Third Street, Cambridge, Massachusetts, and at any adjournment or postponement thereof.

All proxies will be voted in accordance with the instructions contained in those proxies. If no choice is specified, the proxies will be voted in favor of the matters set forth in the accompanying Notice of Meeting.

Our 2014 CEO Letter to Stockholders and Annual Report on Form 10-K for the fiscal year ended December 31, 2013 are being mailed with these proxy materials to all stockholders entitled to vote at the annual meeting. These proxy materials are expected to be first mailed to stockholders on or about August 20, 2014.

Important Notice Regarding the Availability of Proxy Materials for the Annual Meeting of Stockholders to be Held on September 25, 2014:

This proxy statement, our Annual Report on Form 10-K and our 2014 CEO Letter to Stockholders are available for viewing, printing and downloading at www.alnylam.com/AnnualMeeting.

A copy of our Annual Report on Form 10-K for the fiscal year ended December 31, 2013, as filed with the Securities and Exchange Commission, or SEC, will be furnished without charge to any stockholder upon written request to Alnylam Pharmaceuticals, Inc., 300 Third Street, Cambridge, Massachusetts 02142, Attention: Investor Relations and Corporate Communications.

This proxy statement and our Annual Report on Form 10-K for the fiscal year ended December 31, 2013 are also available on the SEC's website at www.sec.gov.

IMPORTANT INFORMATION ABOUT THE ANNUAL MEETING AND VOTING

- Q. Why did I receive these proxy materials?** **A.** We are providing these proxy materials to you in connection with the solicitation by our board of directors of proxies to be voted at our 2014 annual meeting of stockholders to be held at our offices at 300 Third Street, Cambridge, Massachusetts on Thursday, September 25, 2014 at 9:00 a.m., Eastern Time. As a stockholder of Alnylam, you are invited to attend our annual meeting and are entitled and requested to vote on the proposals described in this proxy statement.
- Q. Who can vote at the annual meeting?** **A.** To be entitled to vote, you must be a stockholder of record at the close of business on August 15, 2014, the record date for our annual meeting. If you are a stockholder of record on August 15, 2014, you will be entitled to vote

all of the shares that you hold on that date at the annual meeting and at any postponement or adjournment thereof.

As of March 31, 2014, there were 75,484,782 shares of our common stock outstanding.

Q. What are the voting rights of the holders of common stock?

A. Each outstanding share of our common stock will be entitled to one vote on each matter considered at the annual meeting.

Q. How do I vote?

A. If your shares are registered directly in your name, you may vote:

- (1) **Over the Internet:** Go to the website of our tabulator, Computershare Trust Company, N.A., at www.investorvote.com/ALNY. Use the vote control number printed on your enclosed proxy card to access your account and vote your shares. You must specify how you want your shares voted or your Internet vote cannot be completed and you will receive an error message. Your shares will be voted according to your instructions. You must submit your Internet proxy before 11:59 p.m., Eastern Time, on September 24, 2014, the day before the annual meeting, for your proxy to be valid and your vote to count.
- (2) **By Telephone:** Call 1-800-652-VOTE (8683), toll free from the United States, Canada and Puerto Rico, and follow the recorded instructions. You must specify how you want your shares voted and confirm your vote at the end of the call or your telephone vote cannot be completed. Your shares will be voted according to your instructions. You must submit your telephonic proxy before 11:59 p.m., Eastern Time, on September 24, 2014, the day before the annual meeting, for your proxy to be valid and your vote to count.
- (3) **By Mail:** Complete and sign your enclosed proxy card and mail it in the enclosed postage prepaid envelope to Computershare. Computershare must receive the proxy card not later than September 24, 2014, the day before the annual meeting, for your proxy to be valid and your vote to count. Your shares will be voted according to your instructions. If you do not specify how you want your shares voted, the persons named as proxies will follow our board's recommendations and vote your shares:
 - "FOR" the election of all director nominees;
 - "FOR" the approval, on a non-binding advisory basis, of our named executive officer compensation;
 - "FOR" the ratification of the appointment of PricewaterhouseCoopers LLP as our independent auditors for the fiscal year ending December 31, 2014; and
 - On any other matters properly brought before the annual meeting, in accordance with the best judgment of the named proxies.
- (4) **In Person at the Meeting:** If you attend the annual meeting, you may deliver your completed proxy card in person or you may vote by completing a ballot, which we will provide to you at the meeting. You may still attend the annual meeting and vote in person even if you have already voted by proxy.

If your shares are held in “street name,” meaning they are held for your account by a bank, broker or other nominee, you should receive a proxy card and voting instructions with these proxy materials from that organization rather than from Alnylam. You will receive instructions from your bank, broker or other nominee explaining how you can vote your shares and whether they permit Internet or telephone voting. Follow the instructions from your broker, bank or other nominee included with these proxy materials, or contact your broker or bank to request a proxy form. To vote in person at the annual meeting, contact your bank, broker or other nominee who holds your shares to obtain a broker’s proxy card and bring it with you to the annual meeting. A broker’s proxy is *not* the form of proxy enclosed with this proxy statement. **You will not be able to vote shares you hold in “street name” in person at the annual meeting unless you have a proxy from your bank, broker or other nominee issued in your name giving you the right to vote your shares.**

- Q. Can I change my vote?** **A.** If your shares are registered directly in your name, you may revoke your proxy and change your vote at any time before the annual meeting. To do so, you must do one of the following:
- (1) Vote over the Internet or by telephone as instructed above. Only your latest Internet or telephone vote is counted. You may not change your vote over the Internet or by telephone after 11:59 p.m., Eastern Time, on September 24, 2014.
 - (2) Sign a new proxy and submit it as instructed above. Only your latest dated proxy, received by Computershare not later than September 24, 2014, will be counted.
 - (3) Attend the annual meeting, request that your proxy be revoked and vote in person as instructed above. Attending the annual meeting will not revoke your Internet vote, telephone vote or proxy, as the case may be, unless you specifically request it.

If your shares are held in “street name,” you may submit new voting instructions by contacting your bank, broker or other nominee. You may also vote in person at the annual meeting if you obtain a broker’s proxy as described in the answer above.

- Q. Will my shares be voted if I do not return my proxy?** **A.** **If your shares are registered directly in your name,** your shares will not be voted if you do not vote over the Internet, by telephone, by returning your proxy or by ballot at the annual meeting.

If your shares are held in “street name,” your bank, broker or other nominee may under certain circumstances vote your shares if you do not timely return your proxy. Banks, brokers and other nominees can vote customers’ unvoted shares on discretionary matters but cannot vote such shares on non-discretionary matters. If you do not timely return a proxy to your bank, broker or other nominee to vote your shares, your bank, broker or other nominee may, on discretionary matters, either vote your shares or leave your shares unvoted. **Your bank, broker or other nominee cannot vote your shares on any non-discretionary matter.**

The election of directors (Proposal 1) and the non-binding advisory vote on executive compensation (Proposal 2) are non-discretionary matters. The ratification of the appointment of our independent auditors

(Proposal 3) is a discretionary matter. We encourage you to provide voting instructions to your bank, broker or other nominee by giving your proxy to them. This ensures that your shares will be voted at the annual meeting according to your instructions. You should receive directions from your bank, broker or other nominee about how to submit your proxy to them at the time you receive this proxy statement.

- Q. How many shares must be present to hold the annual meeting?**
- A.** A majority of our outstanding shares of common stock must be present to hold the annual meeting and conduct business. This is called a quorum. For purposes of determining whether a quorum exists, we count as present any shares that are voted over the Internet, by telephone, by completing and submitting a proxy or that are represented in person at the meeting. Further, for purposes of establishing a quorum, we will count as present shares that a stockholder holds even if the stockholder votes to abstain or only votes on one of the proposals. In addition, we will count as present shares held in “street name” by banks, brokers or nominees who indicate on their proxies that they do not have authority to vote those shares on Proposals 1 and 2. If a quorum is not present, we expect to adjourn the annual meeting until we obtain a quorum.
- Q. What vote is required to approve each matter and how are votes counted?**
- A. Proposal 1 — Election of Three Class I Directors**
- The three nominees for Class I director receiving the highest number of votes FOR election will be elected as directors. This is called a plurality. **Proposal 1 is a non-discretionary matter.** Therefore, if your shares are held by your bank, broker or other nominee in “street name” and you do not vote your shares, your bank, broker or other nominee cannot vote your shares on Proposal 1. Shares held in “street name” by banks, brokers or nominees who indicate on their proxies that they do not have authority to vote the shares on Proposal 1 will not be counted as votes FOR or WITHHELD from any nominee and will be treated as “broker non-votes.” As a result, “broker non-votes” will have no effect on the voting on Proposal 1. With respect to Proposal 1, you may:
- vote FOR all nominees;
 - vote FOR one or more nominee(s) and WITHHOLD your vote from the other nominee(s); or
 - WITHHOLD your vote from all nominees.

Votes that are withheld will not be included in the vote tally for the election of directors and will not affect the results of the vote.

Proposal 2 — Non-binding Advisory Vote on the Compensation of Our Named Executive Officers

To approve Proposal 2, stockholders holding a majority of the votes cast on the matter must vote FOR the approval of the compensation of our named executive officers, as described in the “Compensation Discussion and Analysis,” executive compensation tables and accompanying narrative disclosures in this proxy statement. **Proposal 2 is a non-discretionary matter.** Therefore, if your shares are held by your bank, broker or other nominee in “street name” and you do not vote your shares, your bank, broker or other nominee cannot vote your shares on Proposal 2, and your non-vote will have no effect on the outcome of this proposal. If you vote to ABSTAIN on this Proposal 2, your shares will not be voted FOR or AGAINST the proposal and will also not be counted as votes cast or shares

withheld on Proposal 2. As a result, voting to ABSTAIN will have no effect on the voting on Proposal 2.

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

Proposal 3 — Ratification of Appointment of Independent Auditors

To approve Proposal 3, stockholders holding a majority of the votes cast on the matter must vote FOR the proposal. **Proposal 3 is a discretionary matter.** If your shares are held by your bank, broker or other nominee in “street name” and you do not vote your shares, your bank, broker or other nominee may vote your unvoted shares on Proposal 3. If you vote to ABSTAIN on Proposal 3, your shares will not be voted FOR or AGAINST the proposal and will also not be counted as votes cast or shares voting on the proposal. As a result, voting to ABSTAIN will have no effect on the voting on Proposal 3.

Although stockholder approval of our audit committee’s appointment of PricewaterhouseCoopers LLP as our independent auditors for the year ended December 31, 2014 is not required, we believe that it is advisable to give stockholders an opportunity to ratify this appointment. If this proposal is not approved at the annual meeting, our audit committee will reconsider its appointment of PricewaterhouseCoopers LLP as our independent auditors for the year ended December 31, 2014.

Q. Are there other matters to be voted on at the annual meeting?

A. We do not know of any matters that may come before the annual meeting other than the election of three Class I directors, the non-binding advisory vote on the compensation of our named executive officers and the ratification of the appointment of our independent auditors. If any other matters are properly presented at the annual meeting, the persons named in the accompanying proxy intend to vote, or otherwise act, in accordance with their judgment on the matter.

Q. Where can I find the voting results?

A. Preliminary voting results will be announced at the annual meeting. We expect to report the voting results in a Current Report on Form 8-K within four business days following the adjournment of our annual meeting. If final voting results are not available to us in time to file a Current Report on Form 8-K within four business days after the annual meeting, we intend to file a Current Report on Form 8-K to publish preliminary results and, within four business days after the final results are known to us, to file an additional Current Report on Form 8-K to publish the final results.

Q. What are the costs of soliciting these proxies?

A. We will bear the cost of soliciting proxies. In addition to these proxy materials, our directors, officers and employees may solicit proxies by telephone, e-mail, facsimile and in person, without additional compensation. We also expect to retain a third party proxy solicitor to solicit proxies by mail, courier, telephone and facsimile and to request brokers, custodians and fiduciaries to forward proxy soliciting materials to the owners of stock held in their names and we expect to pay a fee for these services in the range of \$6,000 to \$8,000, plus expenses. We may reimburse brokers or persons holding stock in their names, or in the names

of their nominees, for their expenses in sending proxies and proxy materials to beneficial owners.

Q. How do I vote my 401(k) shares?

A. You may give voting instructions for the number of shares of Alnylam common stock equal to the interest in Alnylam common stock credited to your 401(k) plan account as of the record date. To vote these shares, complete and return to Computershare the proxy card sent to you with this proxy statement. The 401(k) plan trustee will vote your shares according to your instructions. Only Computershare and its affiliates or agents will have access to your individual voting instructions. You may revoke previously given voting instructions by filing with the trustee either a written revocation or a properly completed and signed proxy bearing a later date. To vote your 401(k) plan shares, you must provide your voting instructions to Computershare before 11:59 p.m., Eastern Time, on September 23, 2014, for your proxy to be valid and your vote to count. If you do not provide voting instructions to the 401(k) plan trustee, the 401(k) plan trustee will not vote your shares.

Householding of Annual Meeting Materials

Some banks, brokers and other nominee record holders may be participating in the practice of “householding” proxy statements and annual reports. This means that only one copy of our proxy statement and annual report to stockholders may have been sent to multiple stockholders in your household. We will promptly deliver a separate copy of either document to you upon written or oral request to Alnylam Pharmaceuticals, Inc., 300 Third Street, Cambridge, Massachusetts 02142, Attention: Investor Relations and Corporate Communications, telephone: (617) 551-8200. If you want to receive separate copies of the proxy statement or annual report to stockholders in the future, or if you are receiving multiple copies and would like to receive only one copy per household, you should contact your bank, broker or other nominee record holder, or you may contact us at the above address and phone number.

OWNERSHIP OF OUR COMMON STOCK

The following table sets forth information regarding beneficial ownership of our common stock as of March 31, 2014, except as otherwise set forth in the footnotes below, by:

- each person, or group of affiliated persons, known to us to be the beneficial owner of more than 5% of the outstanding shares of our common stock;
- each of our directors and director nominees;
- our principal executive officer, our principal financial officer and our three other most highly compensated executive officers who were serving as executive officers on December 31, 2013, whom, collectively, we refer to as our named executive officers; and
- all of our directors and executive officers as a group.

The number of shares of common stock beneficially owned by each person or entity is determined in accordance with the applicable rules of the SEC and includes voting or investment power with respect to shares of our common stock. The information is not necessarily indicative of beneficial ownership for any other purpose. Unless otherwise indicated, to our knowledge, all persons named in the table have sole voting and investment power with respect to their shares of common stock, except to the extent authority is shared by spouses under community property laws. The inclusion herein of any shares as beneficially owned does not constitute an admission of beneficial ownership of those shares by the person listed in the table.

| <u>Name and Address of Beneficial Owner(1)</u> | <u>Number of Shares Owned</u> | + | <u>Number of Shares Acquirable Within 60 Days(2)</u> | = | <u>Total Beneficial Ownership</u> | <u>Percentage of Common Stock Beneficially Owned(3)</u> |
|--|-------------------------------|---|--|---|-----------------------------------|---|
| Holders of more than 5% of our common stock | | | | | | |
| FMR LLC(4) | 9,514,511 | | — | | 9,514,511 | 12.6% |
| Sanofi(5) | 9,110,786 | | — | | 9,110,786 | 12.1% |
| Wellington Management Company, LLP(6) | 8,147,876 | | — | | 8,147,876 | 10.8% |
| Vanguard Specialized Funds-Vanguard Health Care Fund(7) | 4,105,200 | | — | | 4,105,200 | 5.4% |
| BlackRock, Inc.(8) | 3,941,556 | | — | | 3,941,556 | 5.2% |
| T. Rowe Price Associates, Inc.(9) | 3,814,045 | | — | | 3,814,045 | 5.1% |
| Directors and Named Executive Officers | | | | | | |
| Dennis A. Ausiello, M.D. | 16,665(10) | | 706 | | 17,371 | * |
| John K. Clarke | 8,891 | | 110,000 | | 118,891 | * |
| Victor J. Dzau, M.D. | — | | 105,000 | | 105,000 | * |
| Marsha H. Fanucci | 10,000 | | 60,000 | | 70,000 | * |
| John M. Maraganore, Ph.D. | 80,232(11) | | 1,263,048 | | 1,343,280 | 1.8% |
| Steven M. Paul, M.D. | — | | 60,847 | | 60,847 | * |
| Paul R. Schimmel, Ph.D. | 310,996(12) | | 45,706 | | 356,702 | * |
| Phillip A. Sharp, Ph.D. | 266,899(13) | | 345,918 | | 612,817 | * |
| Kevin P. Starr | — | | 190,918 | | 190,918 | * |
| Barry E. Greene | 36,081(11) | | 593,049 | | 629,130 | * |
| Akshay K. Vaishnav, M.D., Ph.D. | —(11) | | 183,725 | | 183,725 | * |
| Laurence E. Reid, Ph.D. | 5,589(11) | | 180,726 | | 186,315 | * |
| Michael P. Mason | 3,442(11) | | 10,154 | | 13,596 | * |
| All directors and executive officers as a group (13 persons) | 738,795 | | 3,149,797 | | 3,888,592 | 4.9% |

* Less than 1% of our outstanding common stock.

- (1) Unless otherwise indicated, the address of each stockholder is c/o Alnylam Pharmaceuticals, Inc., 300 Third Street, Cambridge, MA 02142.
- (2) Reflects shares issuable upon the exercise of stock options that are exercisable or will become exercisable within 60 days after March 31, 2014.
- (3) Percentage of beneficial ownership is based on 75,484,782 shares of our common stock outstanding as of March 31, 2014. Shares of common stock subject to options currently exercisable, or exercisable within 60 days of March 31, 2014, are deemed outstanding for computing the percentage of the common stock beneficially owned by the person holding such options but are not deemed outstanding for computing the percentage ownership of any other person.
- (4) According to Amendment No. 9 to a Schedule 13G filed by FMR LLC (previously known as FMR Corp.) with the SEC on February 14, 2014, as of December 31, 2013, Fidelity Management & Research Company, a wholly-owned subsidiary of FMR LLC and an investment adviser registered under Section 203 of the Investment Advisers Act of 1940, is the beneficial owner of 7,596,645 shares of our common stock, as a result of acting as an investment adviser to various investment companies registered under Section 8 of the Investment Company Act of 1940. Edward C. Johnson 3d, Chairman of FMR LLC, and FMR LLC, through its control of Fidelity Management & Research Company and the funds, each has sole power to dispose of the 7,596,645 shares of our common stock owned by such funds. Fidelity SelectCo, LLC, or SelectCo, a wholly-owned subsidiary of FMR LLC and an investment adviser registered under Section 203 of the Investment Advisers Act of 1940, is the beneficial owner of 1,874,466 shares of our common stock, as a result of acting as an investment adviser to various investment companies registered under Section 8 of the Investment Company Act of 1940. Edward C. Johnson 3d and FMR LLC, through its control of SelectCo and the SelectCo funds, each has sole power to dispose of the 1,874,466 shares of our common stock owned by such funds. The ownership of one investment company, Fidelity Growth Company Fund, amounted to 4,840,536 shares of our common stock. Neither FMR LLC nor Edward C. Johnson 3d has the sole power to vote or direct the voting of the shares owned directly by such funds, which power resides with the funds' Boards of Trustees. Fidelity Management & Research Company carries out the voting of the shares under written guidelines established by the funds' Boards of Trustees. Pyramis Global Advisors Trust Company, or PGATC, an indirect wholly-owned subsidiary of FMR LLC and a bank as defined in Section 3(a)(6) of the Securities Exchange Act of 1934, as amended, or the Exchange Act, is the beneficial owner of 43,400 shares of our common stock, as a result of its serving as investment manager of institutional accounts owning such shares. Mr. Johnson and FMR LLC, through its control of PGATC, each has sole dispositive and voting power of the 43,400 shares owned by the institutional accounts managed by PGATC as reported above. Various persons have the right to receive or the power to direct the receipt of dividends from, or the proceeds from the sale of, the shares of our common stock held by these funds. The address of FMR LLC is 245 Summer Street, Boston, MA 02210.
- (5) According to a Schedule 13G filed by Sanofi with the SEC on March 5, 2014, as of February 27, 2014, Sanofi was the record and beneficial owner of 8,766,338 shares of our common stock. In January 2014, we entered into a global, strategic collaboration with Genzyme Corporation, or Genzyme, a wholly-owned subsidiary of Sanofi, to discover, develop and commercialize RNA interference, or RNAi, therapeutics as genetic medicines to treat orphan diseases. In connection with the collaboration, we sold to Genzyme 8,766,338 shares of our common stock and Genzyme agreed to pay to us \$700.0 million in aggregate cash consideration under a stock purchase agreement. Pursuant to an investor rights agreement entered into at the closing of the stock purchase, Genzyme also agreed to certain restrictions regarding the voting and disposition of shares of our common stock held by them. Under the investor rights agreement, Genzyme has the right to purchase additional securities of Alnylam in the event that we propose to issue or sell any equity securities, subject to specified exceptions, such that Genzyme would be able generally to maintain its ownership percentage in Alnylam. In accordance with our investor rights agreement, as a result of our issuance of shares in connection with an acquisition in March 2014, Genzyme exercised its right to purchase an additional 344,448 shares of our common stock, allowing Genzyme to maintain its ownership level of our common stock of approximately 12%. The information contained in the table above includes the shares reported by Sanofi on the Schedule 13G as well as the 344,448 additional shares that Genzyme purchased in March 2014. The address of Sanofi is 54 Rue La Boétie, 75008 Paris (France).

- (6) According to Amendment No. 1 to a Schedule 13G filed by Wellington Management Company, LLP, or Wellington Management, with the SEC on February 14, 2014, as of December 31, 2013, Wellington Management, in its capacity as an investment adviser, may be deemed to beneficially own 8,147,876 shares of our common stock which are held of record by clients of Wellington Management. Those clients have the right to receive, or the power to direct the receipt of, dividends from, or the proceeds from the sale of, such securities. Vanguard Health Care Fund is the only client known to have such right or power with respect to more than five percent of the reported shares. Wellington Management has shared power to vote or to direct the vote with respect to 3,436,895 shares of our common stock and shared power to dispose or to direct the disposition of 8,147,876 shares of our common stock. The address of Wellington Management is 280 Congress Street, Boston, MA 02210.
- (7) According to a Schedule 13G filed by Vanguard Specialized Funds – Vanguard Health Care Fund, or Vanguard, with the SEC on February 4, 2014, as of December 31, 2013, Vanguard has the sole power to vote the shares owned. The address of Vanguard is 100 Vanguard Blvd., Malvern, PA 19355.
- (8) According to Amendment No. 4 to a Schedule 13G filed by BlackRock, Inc. with the SEC on January 28, 2014, as of December 31, 2013, BlackRock, Inc. has the sole power to vote or direct the voting of the shares owned. Various persons have the right to receive or the power to direct the receipt of dividends from, or the proceeds from the sale of, the shares of our common stock held by BlackRock, Inc. The address of BlackRock, Inc. is 40 East 52nd Street, New York, NY 10022.
- (9) According to a Schedule 13G filed by T. Rowe Price Associates, Inc., or Price Associates, with the SEC on February 12, 2014, as of December 31, 2013, these securities are owned by various individual and institutional investors which Price Associates serves as an investment adviser with power to direct investments and/or sole power to vote the securities. For the purposes of the reporting requirements of the Exchange Act, Price Associates is deemed to be a beneficial owner of such securities; however, Price Associates expressly disclaims that it is, in fact, the beneficial owner of such securities. The address of Price Associates is 100 E. Pratt Street, Baltimore, MD 21202.
- (10) Includes 3,500 shares of our common stock held in a trust, of which Dr. Ausiello's spouse is the trustee.
- (11) Includes shares of our common stock contributed by Alnylam to our 401(k) plan for the benefit of our named executive officers as of March 31, 2014: Dr. Maraganore, 2,618 shares; Mr. Greene, 2,489 shares; Dr. Reid, 1,683 shares; and Mr. Mason, 1,906 shares. In February 2014, Dr. Vaishnav diversified his retirement plan portfolio by selling shares of our common stock in his 401(k) plan received from our 401(k) matching contribution program.
- (12) Includes shares of our common stock held by the Paul Schimmel Prototype PSP, of which Dr. Schimmel is the trustee and over which he has sole voting and investment power and the Schimmel Revocable Trust U/A dated 9/6/2000, of which Dr. Schimmel and his spouse are trustees and share voting and investment power.
- (13) Includes shares of our common stock held by the Phillip A. Sharp 2009 Grantor Retained Annuity Trust No. 3 and the Phillip A. Sharp 2010 Grantor Retained Annuity Trust No. 6, both of which Dr. Sharp is the trustee and over which he has sole voting and investment power.

Section 16(a) Beneficial Ownership Reporting Compliance

Section 16(a) of the Exchange Act requires our directors, executive officers and the holders of more than 10% of our common stock to file with the SEC initial reports of ownership of our common stock and other equity securities on a Form 3 and reports of changes in such ownership on a Form 4 or Form 5. Officers, directors and 10% stockholders are required by SEC regulations to furnish us with copies of all Section 16(a) forms they file. Based solely on a review of our records and written representations by the persons required to file these reports, we believe that all such persons complied on a timely basis with the filing requirements of Section 16(a) during the fiscal year ended December 31, 2013. However, on September 11, 2013, our compensation committee approved the grant of an option to purchase 10,000 shares of common stock to each employee with ten

consecutive years of employment, including Dr. Maraganore. This grant was inadvertently omitted from the Form 4 filed with the SEC for Dr. Maraganore on September 12, 2013 and was subsequently reported on a Form 4/A filed with the SEC on September 24, 2013.

PROPOSAL 1 — ELECTION OF CLASS I DIRECTORS

We have three classes of directors, Class I, Class II and Class III, and the board has set the number of directors at nine. At each annual meeting, directors are elected for a term of three years to succeed those whose terms are expiring. The directors are divided as equally as possible among the three classes, and the terms of the three classes are staggered so that only one class is elected by stockholders annually.

At the annual meeting, we are proposing the election of three Class I directors to hold office until the annual meeting of stockholders to be held in 2017, or until their respective successors have been duly elected and qualified. Upon the recommendation of the nominating and corporate governance committee of our board, the board has nominated John M. Maraganore, Ph.D., Paul R. Schimmel, Ph.D. and Phillip A. Sharp, Ph.D. for election to the board of directors as Class I directors. Drs. Maraganore, Schimmel and Sharp are currently serving as Class I directors and each has served as a director of the company since 2002. The Class I directors elected at this year's annual meeting will serve as members of our board until the 2017 annual meeting of stockholders, or until their respective successors are elected and qualified.

The persons named in the enclosed proxy will vote to elect Drs. Maraganore, Schimmel and Sharp as Class I directors unless the proxy is marked otherwise. Drs. Maraganore, Schimmel and Sharp have indicated their willingness to serve on our board, but if any nominee should be unwilling or unable to serve, the person acting under the proxy may vote the proxy for a substitute nominee designated by our board, unless the board reduces the number of directors accordingly.

Board Recommendation

Our board of directors recommends a vote “FOR” the election of each of Dr. Maraganore, Dr. Schimmel and Dr. Sharp as a Class I director.

Set forth below for each director, including the Class I director nominees, Drs. Maraganore, Schimmel and Sharp, is information as of February 15, 2014 with respect to his or her (a) name and age, (b) positions and offices at Alnylam, if any, (c) principal occupation and business experience during at least the past five years, (d) directorships, if any, of other publicly-held companies, held currently or during the past five years, and (e) the year such person became a member of our board of directors. The duration of an individual's service on our board or as an officer described below includes service on the board of directors or as an officer of our predecessor company, which was also known as Alnylam Pharmaceuticals, Inc.

We have also included information below regarding each director's specific experience, qualifications, attributes and skills that led the nominating and corporate governance committee and our board of directors to the conclusion that he or she should serve as a director in light of our business and structure. Our board has determined that each director serving on our board of directors, with the exception of Dr. Maraganore, is independent within the meaning of the director independence standards of The NASDAQ Global Market and the Exchange Act. There are no family relationships among any of our directors or executive officers.

As of July 1, 2014, we will have a vacancy on our board of directors due to Dr. Victor Dzau's decision to resign from the board effective June 30, 2014, as a result of his pending appointment as President of the Institute of Medicine effective July 1, 2014. We intend to fill this vacancy by a vote of the majority of our remaining directors, pursuant to our amended and restated bylaws.

| <u>Name</u> | <u>Age</u> | <u>Director Since</u> | <u>Principal Occupation, Other Business Experience and Other Directorships During the Past Five Years, and Other Specific Experience, Qualifications, Attributes and Skills</u> |
|---|------------|-----------------------|---|
| Class I directors, nominees to be elected at the 2014 annual meeting (terms expiring in 2017) | | | |
| John M. Maraganore, Ph.D. | 51 | 2002 | <p>Dr. Maraganore has served as our Chief Executive Officer and as a member of our board of directors since December 2002. Dr. Maraganore also served as our President from December 2002 to December 2007. From April 2000 to December 2002, Dr. Maraganore served as Senior Vice President, Strategic Product Development for Millennium Pharmaceuticals, Inc. (now a wholly-owned subsidiary of Takeda Pharmaceutical Company Limited), a biopharmaceutical company. He also serves as a director of Agios Pharmaceuticals, Inc., bluebird bio, Inc., Regulus Therapeutics Inc. (through May 22, 2014) and the Biotechnology Industry Organization.</p> <p>Dr. Maraganore has over 25 years of experience in the biotechnology industry, bringing to our board critical scientific, research and development, and general management expertise. In prior roles, Dr. Maraganore has led the research, development and FDA approval and commercialization of important drug therapies, including Angiomax[®], an anticoagulant for patients undergoing coronary angioplasty procedures, of which Dr. Maraganore was an inventor. As a founder and leader of new businesses, he has developed high-performing organizations and created stockholder value while focusing on leading-edge scientific research. A true visionary, strategist and innovator, Dr. Maraganore's broad experience and personal passion bring an invaluable perspective to our board.</p> |
| Paul R. Schimmel, Ph.D. <i>Compensation Committee Science and Technology Committee</i> | 73 | 2002 | <p>Dr. Schimmel is a scientific founder of Alnylam and has served as a member of our board of directors since June 2002. Dr. Schimmel has been the Ernest and Jean Hahn Professor of Molecular Biology and Chemistry and a member of the Skaggs Institute for Chemical Biology at the Scripps Research Institute since 1997. Dr. Schimmel is a member of the National Academy of Sciences, the Institute of Medicine and the American Academy of Arts and Sciences.</p> |

| <u>Name</u> | <u>Age</u> | <u>Director Since</u> | <u>Principal Occupation, Other Business Experience and Other Directorships During the Past Five Years, and Other Specific Experience, Qualifications, Attributes and Skills</u> |
|--|------------|-----------------------|--|
| Phillip A. Sharp, Ph.D. <i>Science and Technology Committee (Chair)</i> | 69 | 2002 | <p>Dr. Schimmel is a noted academic scholar, and his knowledge and experience offer a critical scientific perspective to our board. Dr. Schimmel has authored or co-authored more than 450 scientific papers, and has been active in many scientific and academic organizations and committees. Having a longstanding interest in the applications of basic biomedical research to human health, Dr. Schimmel holds several patents and is a co-founder or founding director of a number of biotechnology companies, of which six, including Alnylam, became publicly traded. As one of our scientific founders, Dr. Schimmel’s insight and scientific expertise are invaluable assets to our board when evaluating our strategy and unique challenges as one of the first companies focused on the discovery and development of therapeutics based on RNAi.</p> <p>Dr. Sharp is a scientific founder of Alnylam and has served as a member of our board of directors since June 2002. Dr. Sharp is an Institute Professor at the David H. Koch Institute for Integrative Cancer Research, Massachusetts Institute of Technology (MIT), and was the Founding Director of the McGovern Institute for Brain Research at MIT. Dr. Sharp has been a professor at MIT since 1974. He is a member of the National Academy of Sciences, the Institute of Medicine and American Academy of Arts and Sciences. Dr. Sharp also formerly served as a director of Biogen, Inc. (now Biogen Idec Inc.), a biotechnology company, which he co-founded in 1978.</p> <p>Dr. Sharp, a leading researcher in molecular biology and biochemistry, brings to our board a fundamental understanding of the core scientific principles of our business. Dr. Sharp received the Nobel Prize for Physiology or Medicine in 1993, received numerous awards and honorary degrees for his scientific work, and served on many advisory boards for the government, academic institutions, scientific societies and companies. Dr. Sharp has strategic expertise based upon his role as a co-founder and former director of Biogen Idec Inc. As one of our scientific founders, Dr. Sharp’s insight and scientific expertise are invaluable assets to our board when evaluating our strategy and unique challenges as one of the first companies focused on the discovery and development of RNAi therapeutics, and he is uniquely qualified to serve as the chair of our science and technology committee.</p> |

| <u>Name</u> | <u>Age</u> | <u>Director Since</u> | <u>Principal Occupation, Other Business Experience and Other Directorships During the Past Five Years, and Other Specific Experience, Qualifications, Attributes and Skills</u> |
|--|------------|-----------------------|--|
| Class II directors (terms expiring in 2015) | | | |
| Dennis A. Ausiello, M.D. <i>Nominating and Corporate Governance Committee Science and Technology Committee</i> | 68 | 2012 | <p>Dr. Ausiello has served as a member of our board of directors since April 2012. Dr. Ausiello serves as the Director of the Center for Assessment Technology and Continuous Health (CATCH), Jackson Distinguished Professor of Clinical Medicine at Harvard Medical School and Physician-in-Chief Emeritus at Massachusetts General Hospital, and served as the Chief of Medicine at Massachusetts General Hospital from 1996 to April 2013. Dr. Ausiello was the President of the Association of American Physicians in 2006. He is a member of the Institute of Medicine of the National Academy of Sciences and a fellow of the American Academy of Arts and Sciences. He also serves as a director of Pfizer Inc.</p> <p>Dr. Ausiello’s experience as a practicing physician, a scientist and a nationally recognized leader in academic medicine enable him to bring valuable insights to our board of directors, particularly as we advance our clinical development pipeline and initiate additional clinical trials. In addition, Dr. Ausiello oversees a large research portfolio and an extensive research and education budget at Massachusetts General Hospital, giving him a valuable perspective on drug discovery and development. Through his previous work as the Chief of Medicine at Massachusetts General Hospital, Dr. Ausiello also brings leadership, oversight and finance experience to our board of directors.</p> |
| John K. Clarke <i>Chairman of the Board Audit Committee Nominating and Corporate Governance Committee (Chair)</i> | 60 | 2002 | <p>Mr. Clarke is a founder of Alnylam and has served as the chairman of our board of directors since June 2002. Since founding Cardinal Partners, a venture capital firm focused on healthcare, in 1997, Mr. Clarke has served as its Managing General Partner. Mr. Clarke also serves as a director of Momenta Pharmaceuticals, Inc. and Verastem, Inc.</p> <p>Mr. Clarke has over 29 years of experience as a venture capitalist in the life sciences and healthcare industries, bringing a deep understanding to our board of the challenges of building a successful biotechnology company. He co-founded and served as interim chief executive officer of numerous successful private and publicly traded biotechnology companies. Mr. Clarke has a keen understanding of the interplay between management and the board and is well-versed in the current best practices in corporate governance, making him well-suited to serve as the chairman of our board and chair of our nominating and corporate governance committee.</p> |

| <u>Name</u> | <u>Age</u> | <u>Director Since</u> | <u>Principal Occupation, Other Business Experience and Other Directorships During the Past Five Years, and Other Specific Experience, Qualifications, Attributes and Skills</u> |
|---|------------|-----------------------|--|
| Marsha H. Fanucci <i>Audit Committee</i> | 60 | 2010 | <p>Ms. Fanucci has served as a member of our board of directors since December 2010. Ms. Fanucci served as Senior Vice President and Chief Financial Officer of Millennium Pharmaceuticals, Inc. (now a wholly-owned subsidiary of Takeda Pharmaceutical Company Limited), a biopharmaceutical company, from July 2004 to January 2009. While at Millennium, she also served as Vice President, Finance and Corporate Strategy from July 2003 to June 2004, and prior to that as Vice President of Corporate Development from 2000. Prior to joining Millennium, Ms. Fanucci served as Vice President of Corporate Development and Strategy at Genzyme Corporation, a biotechnology company, from 1998 to 2000. Ms. Fanucci also serves as a director of Ironwood Pharmaceuticals, Inc. and Momenta Pharmaceuticals, Inc.</p> <p>Ms. Fanucci has demonstrated an expertise with respect to public company and financial accounting matters, including over 24 years of leadership and consulting experience in biotechnology and healthcare companies. Her leadership in the areas of corporate strategy, financial planning and reporting, and operations, are an asset to our board, and in particular, our audit committee, as we continue to grow our company, advance our clinical development pipeline and partner additional programs and technologies.</p> |

Class III directors (terms expiring in 2016)

| | | | |
|---|----|------|--|
| Victor J. Dzau, M.D. <i>Nominating and Corporate Governance Committee Science and Technology Committee</i> | 68 | 2007 | <p>Dr. Dzau has served as a member of our board of directors since April 2007. Dr. Dzau has served as Chancellor for Health Affairs at Duke University and President and Chief Executive Officer of the Duke University Health System since July 2004. From July 1996 to September 2004, he was the Hersey Professor of Theory and Practice of Medicine at Harvard Medical School and Chair of the Department of Medicine, Physician-in-Chief and Director of Research at Brigham and Women’s Hospital. He is a former Chairman of the National Institutes of Health (NIH) Cardiovascular Disease Advisory Committee and served on the Advisory Committee to the Director of the NIH. He is a member of the Institute of Medicine. He also serves as a director of Duke University Health System, Medtronic, Inc., and formerly served as a director of PepsiCo, Inc. and Genzyme Corporation.</p> |
|---|----|------|--|

| <u>Name</u> | <u>Age</u> | <u>Director Since</u> | <u>Principal Occupation, Other Business Experience and Other Directorships During the Past Five Years, and Other Specific Experience, Qualifications, Attributes and Skills</u> |
|--|------------|-----------------------|--|
| Steven M. Paul, M.D. <i>Compensation Committee (Chair)</i> <i>Science and Technology</i> <i>Committee</i> | 63 | 2010 | <p>Dr. Dzau brings to our board extensive experience in the medical field, both in the hospital, as a practicing physician, and the academic research settings. As the President and Chief Executive Officer of the Duke University Health System, Dr. Dzau has a deep understanding of health care providers and of physicians, who are key opinion leaders and partners to Alnylam as we continue to advance our clinical development pipeline and initiate additional clinical trials.</p> <p>Dr. Dzau has informed us of his decision to resign from our board effective June 30, 2014, as a result of his pending appointment as President of the Institute of Medicine.</p> <p>Dr. Paul has served as a member of our board of directors since September 2010. Dr. Paul is the Director of the Appel Alzheimer’s Disease Research Institute and a Professor of Neurology (Neuroscience), Psychiatry and Pharmacology at Weill Cornell Medical College of Cornell University and is also a Venture Partner at Third Rock Ventures, a venture capital firm. Dr. Paul served for 17 years at Eli Lilly and Company, a pharmaceutical company, most recently as the Executive Vice President for Science and Technology and President of the Lilly Research Laboratories, a division of Eli Lilly and Company, from July 2003 to his retirement in February 2010. He is a member of the Institute of Medicine of the National Academy of Sciences and a Fellow of the American Association for the Advancement of Science. Prior to joining Lilly, Dr. Paul served in several senior roles at the National Institute of Mental Health, including serving as the Scientific Director of the Intramural Research Program. Dr. Paul also serves as a director of the Sigma-Aldrich Corporation and the Foundation of the National Institutes of Health.</p> <p>Dr. Paul brings to our board more than 17 years of management experience in the pharmaceutical industry and 35 years of scientific research experience. He is widely recognized as a leader across many dimensions of medical research and drug development, and this expertise is important to our board as we continue to advance our clinical development pipeline and initiate additional clinical trials.</p> |

| <u>Name</u> | <u>Age</u> | <u>Director Since</u> | <u>Principal Occupation, Other Business Experience and Other Directorships During the Past Five Years, and Other Specific Experience, Qualifications, Attributes and Skills</u> |
|---|------------|-----------------------|---|
| Kevin P. Starr <i>Audit Committee (Chair)</i> <i>Compensation Committee</i> | 51 | 2003 | <p>Mr. Starr has served as a member of our board of directors since September 2003. Since April 2007, Mr. Starr has been a Partner of Third Rock Ventures, a venture capital firm. From January 2003 to March 2007, Mr. Starr was an entrepreneur. From December 2001 to December 2002, Mr. Starr served as Chief Operating Officer of Millennium Pharmaceuticals, Inc. (now a wholly-owned subsidiary of Takeda Pharmaceutical Company Limited), a biopharmaceutical company. He also served as Millennium's Chief Financial Officer from December 1998 to December 2002.</p> <p>Mr. Starr is a proven operational leader who brings to our board over 25 years of experience building and leading biotechnology companies. Mr. Starr's background includes executive management roles with responsibility over key financial and business planning functions, including extensive experience in the oversight of financial audits, the design and implementation of financial controls, and corporate governance best practices. In addition, as an entrepreneur and venture capitalist, Mr. Starr has focused on the formation, development and business strategy of multiple start-up companies. Mr. Starr's depth and breadth of financial expertise and his experience handling complex financial and business issues also position him well to serve as chair and financial expert of our audit committee.</p> |

CORPORATE GOVERNANCE

General

We believe that good corporate governance is important to ensure that Alnylam is managed for the long-term benefit of our stockholders. This section describes key corporate governance practices that we have adopted.

We have adopted a code of business conduct and ethics, which applies to all of our officers, directors and employees, as well as charters for our audit committee, our compensation committee, our nominating and corporate governance committee, and our science and technology committee. We have also adopted corporate governance guidelines. We have posted copies of these documents on the Corporate Governance page of the Investors section of our website, www.alnylam.com. We intend to disclose on our website any amendments to, or waivers from, our code of business conduct and ethics required to be disclosed by law or NASDAQ Global Market listing standards.

Corporate Governance Guidelines

Our board of directors has adopted corporate governance guidelines to assist in the exercise of its duties and responsibilities and to serve the best interests of Alnylam and our stockholders. These guidelines, which provide a framework for the conduct of our board of directors' business, provide that:

- our board's principal responsibility is to oversee the management of Alnylam;
- a majority of the members of our board shall be independent directors;

- the independent directors meet regularly in executive session;
- directors have full and free access to management and, as necessary and appropriate, independent advisors; and
- periodically, our board and its committees will conduct a self-evaluation to determine whether they are functioning effectively.

We have posted a copy of our corporate governance guidelines on the Corporate Governance page of the Investors section of our website, www.alnylam.com.

Board Determination of Independence

Under the NASDAQ Marketplace Rules, a director will qualify as an “independent director” if, in the opinion of our board, that person does not have a relationship that would interfere with the exercise of independent judgment in carrying out the responsibilities of a director. Our board has determined that none of Ms. Fanucci, Drs. Ausiello, Dzau, Paul, Schimmel and Sharp, and Messrs. Clarke and Starr have 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 NASDAQ Rule 5605(a)(2). Furthermore, the board has determined that each member of our audit committee, compensation committee and nominating and corporate governance committee is independent within the meaning of the applicable director independence standards of The NASDAQ Global Market and the Exchange Act. In making such determination, our board considered relationships, if any, that each non-employee director or family member of such director has with Alnylam, their beneficial ownership of our outstanding common stock and other facts and circumstances our board deemed relevant in determining their independence.

Role of the Board

Our business is managed under the direction of the board of directors. Management has primary responsibility for the day-to-day operations and affairs of our company and the role of our board is to provide independent oversight of management on behalf of our stockholders. In its oversight role, our board, as a whole and through its committees, is responsible for establishing broad corporate policies and reviewing our overall performance. Our board selects, evaluates and provides for the succession of executive officers and, subject to stockholder election, directors. It reviews and approves corporate objectives and strategies, and evaluates significant policies and proposed major commitments of corporate resources. Our board also participates in decisions that have a potential major economic impact on our company. Management keeps our directors informed of company activity through regular communication, including written reports and presentations at board of directors and committee meetings.

Board Leadership Structure

Our board has determined that the roles of chief executive officer and chairman of the board should be separated at the current time. Mr. Clarke, an independent director, has served as our chairman since the founding of Alnylam in 2002, and Dr. Maraganore has served as our chief executive officer and a director since 2002. Separating these positions allows our chief executive officer to focus on our day-to-day business operations, while allowing the chairman to lead the board in its fundamental role of providing advice to and independent oversight of management. The board recognizes the time, effort and energy that the chief executive officer is required to devote to his position in the current business environment, as well as the commitment required to serve as our chairman, particularly as the board’s oversight responsibilities continue to grow. While our bylaws and corporate governance guidelines do not require that our chairman and chief executive officer positions be separate, our board believes that our current leadership structure is appropriate because it provides an effective balance between strategy development and independent leadership and management oversight.

The Board's Role in Risk Oversight

We face a number of risks in our business, including risks related to: pre-clinical and clinical research and development; manufacturing; regulatory reviews, approvals and oversight; intellectual property filings, prosecution, maintenance and challenges; the establishment and maintenance of strategic alliances; competition; litigation; and the ability to access additional funding for our business; as well as other risks. Our management is responsible for the day-to-day management of the risks that we face, while our board of directors, as a whole and through its committees, has responsibility for the oversight of risk management.

Our board administers its risk oversight function directly and through its four committees. Our chairman meets regularly with our chief executive officer and other executive officers to discuss strategy and risks facing the company. Members of senior management attend the quarterly board meetings and are available to address any questions or concerns raised by the board on risk management-related and any other matters. Each quarter, the board of directors receives presentations from members of senior management on strategic matters involving our business. In addition, as part of its charter, the audit committee regularly discusses with management our risk exposures in the areas of financial reporting, internal controls and compliance with legal and financial regulatory requirements, their potential impact on our company and the steps we take to manage them. The compensation committee assists the board in fulfilling its oversight responsibilities with respect to the management of risks arising from our compensation policies and programs. The nominating and corporate governance committee assists the board in fulfilling its oversight responsibilities with respect to the management of risks associated with board organization, membership and structure, succession planning for our directors and executive officers, and corporate governance. The science and technology committee reviews and advises the board regarding risks arising from our scientific research, discovery and development strategy and programs, and our regulatory compliance and quality programs.

Board of Directors Meetings and Attendance















Our board met five times during 2013, either in person or by teleconference. During 2013, each of our directors attended at least 75% of the aggregate number of board meetings and meetings of the committees on which he or she then served.

Our directors are expected to attend the annual meeting of stockholders. All of our directors attended the 2013 annual meeting of stockholders.

Board Committees

Our board of directors has established four standing committees — audit, compensation, nominating and corporate governance, and science and technology — each of which operates under a written charter that has been approved by our board. We have posted copies of each committee’s charter on the Corporate Governance page of the Investors section of our website, www.alnylam.com. The members of each committee are appointed by our board, upon the recommendation of our nominating and corporate governance committee.

Our board has determined that all of the members of each of the audit, compensation, and nominating and corporate governance committees are independent as defined under the NASDAQ Marketplace rules, and, in the case of all members of our audit committee, the independence requirements of Rule 10A-3 under the Exchange Act. Current committee memberships are shown in the table below:

| | Audit Committee | Compensation Committee | Nominating and Corporate Governance Committee | Science and Technology Committee |
|---------------------------|---|---|---|--|
| Dennis A. Ausiello, M.D. | | |  |  |
| John K. Clarke ★ |  | |  | |
| Victor J. Dzau, M.D. | | |  |  |
| Marsha H. Fanucci |  | | | |
| John M. Maraganore, Ph.D. | | | | |
| Steven M. Paul, M.D. | |  | |  |
| Paul R. Schimmel, Ph.D. | |  | |  |
| Phillip A. Sharp, Ph.D. | | | |  |
| Kevin P. Starr |  |  | | |

★ Chairman of Board/Lead Outside Director  Chairperson  Member

As of July 1, 2014, we will have a vacancy on our board of directors due to Dr. Dzau’s decision to resign from the board effective June 30, 2014, as a result of his pending appointment as President of the Institute of Medicine effective July 1, 2014. The board intends to replace Dr. Dzau on the nominating and corporate governance committee with another independent director.

Audit Committee

As described more fully in its charter, the audit committee oversees our accounting and financial reporting processes, internal controls and audit functions. In fulfilling its role, our audit committee is responsible for, among other things:

- appointing, evaluating, retaining, approving the compensation of and, when necessary, terminating the engagement of our independent auditors;
- taking appropriate action, or recommending that our board of directors take appropriate action, to oversee the independence of our independent auditors;
- reviewing and discussing with management and the independent auditors 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;
- reviewing and discussing our financial risk management policies;

- establishing policies regarding hiring employees from our independent auditors and procedures for the receipt and retention of accounting-related complaints and concerns;
- meeting independently with our independent auditors and management; and
- preparing the annual audit committee report required by SEC rules, which is included below under the heading “Report of the Audit Committee.”

In addition, our audit committee must approve or ratify any related party transaction entered into by us. Our policies and procedures for the review and approval of related person transactions are summarized under the heading “Policies and Procedures for Related Person Transactions,” which appears below.

The members of our audit committee are Messrs. Starr (Chair) and Clarke and Ms. Fanucci. We believe that each member of our audit committee satisfies the requirements for membership, including independence, under the NASDAQ Marketplace Rules and Rule 10A-3(b)(1) under the Exchange Act. Our board has determined that Mr. Starr is an “audit committee financial expert” as defined in Item 407(d)(5) of Regulation S-K. No member of our audit committee is the beneficial owner of more than 10% of our common stock.

Our audit committee met six times during 2013, either in person or by teleconference.

Compensation Committee

Our compensation committee’s responsibilities include, among other things:

- annually reviewing and approving corporate goals and objectives relevant to the compensation of our executive officers;
- reviewing and approving, or making recommendations to our board with respect to, the compensation of our chief executive officer and other executive officers;
- overseeing an evaluation of our senior executives;
- overseeing and administering our stock-based compensation plans and 401(k) plan, and performing the duties imposed on the compensation committee by the terms of those plans;
- reviewing and making recommendations to our board with respect to director compensation;
- reviewing, and amending as necessary, our compensation philosophy and objectives;
- reviewing and discussing annually with management our “Compensation Discussion and Analysis,” which is included beginning on page 27 of this proxy statement; and
- preparing the annual compensation committee report required by SEC rules, which is included immediately following the “Compensation Discussion and Analysis” section appearing below.

The processes and procedures followed by our compensation committee in considering and determining executive compensation is described below under the heading “Compensation Discussion and Analysis.”

The members of our compensation committee are Drs. Paul (Chair) and Schimmel and Mr. Starr. We believe that each member of our compensation committee is an independent director within the meaning of the director independence standards of the NASDAQ Marketplace Rules, a non-employee director as defined in Rule 16b-3 of the Exchange Act, and an outside director pursuant to Section 162(m) of the Internal Revenue Code.

Our compensation committee met five times during 2013, either in person or by teleconference.

Compensation Committee Interlocks and Insider Participation

During fiscal year 2013, none of the members of our compensation committee was a current or former officer or employee of Alnylam and none had any related person transaction involving Alnylam.

During fiscal year 2013, no executive officer of our company served as: (i) a member of the compensation committee (or other committee of the board of directors performing equivalent functions or, in the absence of any such committee, the entire board of directors) of another entity, one of whose executive officers served on our compensation committee; (ii) a director of another entity, one of whose executive officers served on our compensation committee; or (iii) a member of the compensation committee (or other committee of the board of directors performing equivalent functions or, in the absence of any such committee, the entire board of directors) of another entity, one of whose executive officers served as a director of our company.

Risk Considerations in Executive Compensation

Our compensation committee has discussed the concept of risk as it relates to our executive compensation program and our compensation committee does not believe our executive compensation program encourages excessive or inappropriate risk taking. As described more fully below in “Compensation Discussion and Analysis,” we structure our pay to consist of both fixed and variable compensation to motivate our executives to produce superior short- and long-term results that are in the best interests of our company and stockholders in order to attain our ultimate objective of increasing stockholder value. We believe that any risks that may arise from our compensation policies and practices for our employees are not reasonably likely to have a material adverse effect on our company.

Nominating and Corporate Governance Committee

Our nominating and corporate governance committee is responsible for, among other things:

- identifying individuals qualified to become members of our board;
- recommending to our board the persons to be nominated for election as directors and the persons to be appointed to each of our board committees;
- reviewing and making recommendations to our board with respect to management succession planning;
- developing and recommending to our board a set of corporate governance principles; and
- overseeing the evaluation of our board.

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

The current members of our nominating and corporate governance committee are Mr. Clarke (Chair) and Drs. Ausiello and Dzau. We believe that each member of our nominating and corporate governance committee satisfies the requirements for membership, including independence, as established under the NASDAQ Marketplace Rules. As noted above, Dr. Dzau will resign from the board effective June 30, 2014, as a result of his pending appointment as President of the Institute of Medicine effective July 1, 2014. The board intends to replace Dr. Dzau on the nominating and corporate governance committee with another independent director.

Our nominating and corporate governance committee met four times during 2013, either in person or by teleconference.

Science and Technology Committee

Our science and technology committee is responsible for, among other things:

- overseeing our scientific advisory board;
- reviewing our overall scientific and research and development strategy;
- reviewing our research and development programs;

- reviewing our regulatory compliance and quality programs;
- reviewing cognate external scientific research, discoveries and commercial developments, as appropriate; and
- reviewing our overall intellectual property strategies.

The members of our science and technology committee are Drs. Sharp (Chair), Ausiello, Dzau, Paul and Schimmel.

Our science and technology committee met four times during 2013, either in person or by teleconference.

Director Nomination Process

Our nominating and corporate governance committee is responsible for identifying individuals qualified to become directors, consistent with criteria approved by our board, and recommending the persons to be nominated for election as directors.

The process followed by our nominating and corporate governance committee to identify and evaluate director candidates includes requests to board members 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 the committee and our board.

Criteria and Diversity

Our corporate governance guidelines specify that diversity on the board should be considered by the nominating and corporate governance committee in the director identification and nomination process. In considering whether to recommend any particular candidate for inclusion in our board's slate of recommended director nominees, our nominating and corporate governance committee will apply certain criteria, including the candidate's integrity, business acumen, knowledge of our business and industry, experience, diligence, conflicts of interest and ability to act in the interests of all stockholders. Our nominating and corporate governance committee also considers issues of diversity, such as diversity of gender, race and national origin, education, professional experience and differences in viewpoints and skills. While our nominating and corporate governance committee does not have a formal policy with respect to diversity, our board and nominating and corporate governance committee believe that it is essential that the board members represent diverse viewpoints. The committee does not assign specific weights to particular criteria and no particular criterion is a prerequisite for each 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 our board to promote our strategic objectives and fulfill its responsibilities to our stockholders.

The director nominee biographies appearing above under "Proposal 1 – Election of Class I Directors" indicate each nominee's experience, qualifications, attributes and skills that led our nominating and corporate governance committee and board to conclude that he or she should continue to serve as a member of our board. Our nominating and corporate governance committee and board believe that each of the nominees has had substantial achievement in his or her professional and personal pursuits, and possesses the background, talents and experience that our board desires and that will contribute to the best interests of our company and to long-term stockholder value.

Stockholder Nominations

Stockholders may recommend individuals to our nominating and corporate governance committee for consideration as potential director candidates by submitting their names, together with appropriate biographical information and background materials and, if the stockholder is not a stockholder of record, 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 a year as of the date such recommendation is made, to the Nominating and Corporate Governance Committee, c/o Corporate Secretary, Alnylam Pharmaceuticals, Inc., 300 Third Street, Cambridge, Massachusetts 02142. Assuming that appropriate biographical and background material has been provided on a timely basis, the 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. Stockholders also have the right under our bylaws to nominate director candidates directly, without any action or recommendation on the part of the committee or the board, by following the procedures set forth below under the heading “Stockholder Proposals.”

At the annual meeting, stockholders will be asked to consider the election of Drs. Maraganore, Schimmel and Sharp as Class I directors, each of whom currently serves on our board of directors. Drs. Maraganore, Schimmel and Sharp were proposed to our board by our nominating and corporate governance committee and our board determined to include them as its nominees.

Communicating with the Independent 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 chair of our board (if an independent director), the lead director (if one is appointed), or otherwise the chair of our nominating and corporate governance committee, is primarily responsible 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 chair of our board (if an independent director), or the lead director (if one is appointed), or otherwise the chair of our nominating and corporate governance committee, 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 as to which we tend to receive repetitive communications.

Stockholders who wish to send communications on any topic to our board should address such communications to the Board of Directors, c/o Corporate Secretary, Alnylam Pharmaceuticals, Inc., 300 Third Street, Cambridge, Massachusetts 02142.

Report of the Audit Committee

Our audit committee reports to and acts on behalf of our board by providing oversight of our financial management, related person transaction policies and procedures, audits of our financial statements and financial reporting controls and accounting policies and procedures. Our management is responsible for the preparation, presentation and integrity of our financial statements, the appropriateness of our accounting principles and reporting policies, and for establishing and maintaining adequate internal control over financial reporting. The independent registered public accounting firm is responsible for conducting an independent audit of our annual financial statements and our internal control over financial reporting. Our audit committee is responsible for independently overseeing the conduct of these activities by our management and our independent registered public accounting firm.

Our audit committee operates under a written charter adopted by our board that reflects standards contained in the NASDAQ Marketplace Rules. Our audit committee reviews its charter annually. A complete copy of the current audit committee charter is posted on the Corporate Governance page of the Investors section of our website, www.alnylam.com.

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

PricewaterhouseCoopers LLP various communications that PricewaterhouseCoopers LLP is required to provide to our audit committee, including the matters required to be discussed by the Public Company Accounting Oversight Board, or PCAOB, Auditing Standard No. 16, *Communications with Audit Committees*, as amended, which requires the independent registered public accounting firm to provide the audit committee with additional information regarding the scope and results of the audit, including the independent registered public accounting firm’s responsibilities under PCAOB standards, significant issues or disagreements concerning our accounting practices or financial statements, significant accounting policies, significant accounting adjustments, alternative accounting treatments, accounting for significant unusual transactions, and estimates, judgments and uncertainties.

In addition, PricewaterhouseCoopers LLP provided our audit committee with the written disclosures and the letter required by PCAOB Rule 3526, *Communication with Audit Committees Concerning Independence*, as amended, and our audit committee and PricewaterhouseCoopers LLP have discussed its independence from us and our management, including the matters in those written disclosures.

In this context, our audit committee meets regularly with PricewaterhouseCoopers LLP and our management (including private sessions with each of PricewaterhouseCoopers LLP and members of management) to discuss any matters that our audit committee or these individuals believe should be discussed. Our audit committee conducts a meeting each quarter to review the financial statements prior to the public release of earnings.

Based on its discussions with management and PricewaterhouseCoopers LLP, and its review of the representations and information provided by management and PricewaterhouseCoopers LLP, our audit committee recommended to our board that the audited financial statements be included in our Annual Report on Form 10-K for the year ended December 31, 2013. Our audit committee also recommended to our board, and our board has approved, subject to stockholder ratification, the appointment of PricewaterhouseCoopers LLP as our independent auditors for the fiscal year ending December 31, 2014.

By the audit committee of the board of directors of Alnylam,

Kevin P. Starr, Chair
 John K. Clarke
 Marsha H. Fanucci

Principal Accountant Fees and Services

The following table summarizes the fees that our independent auditors, PricewaterhouseCoopers LLP, an independent registered public accounting firm, billed to us for each of the last two fiscal years for audit and other services:

| <u>Fee Category</u> | <u>2013</u> | <u>2012</u> |
|------------------------------|------------------|------------------|
| Audit Fees(1) | \$619,000 | \$659,000 |
| Audit-Related Fees | — | — |
| Tax Fees(2) | — | 2,500 |
| All Other Fees(3) | 1,800 | 1,800 |
| Total Fees | <u>\$620,800</u> | <u>\$663,300</u> |

(1) “Audit Fees” consist of fees for the audit of our annual financial statements, the review of the interim financial statements included in our quarterly reports on Form 10-Q and other professional services provided in connection with regulatory filings or audit engagements. In 2013, this amount also includes \$75,000 for a comfort letter and associated fees in connection with our equity offering, as well as \$25,000 billed for accounting consultations. In 2012, this amount also includes \$90,000 for a comfort letter and

associated fees in connection with our equity offering, as well as \$129,000 billed for accounting consultations.

- (2) “Tax Fees” consist of fees for an amended tax return in 2012.
- (3) “All Other Fees” represent payment for access to the PricewaterhouseCoopers LLP on-line accounting research database.

All such accountant services and fees were pre-approved by our audit committee in accordance with the “Pre-Approval Policies and Procedures” described below.

Pre-Approval Policies and Procedures

Our audit committee is required to pre-approve all audit services to be provided to us by our principal independent auditors, as well as all other services to be provided to us by such independent auditors, except that de minimis non-audit services may be approved in accordance with applicable SEC rules.

CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS

Policies and Procedures for Related Person Transactions

Our board has adopted written policies and procedures for the review of any transaction, arrangement or relationship in which Alnylam is a participant, the amount involved exceeds \$120,000, and one of our executive officers, directors, director nominees or 5% stockholders (or their immediate family members), each of whom we refer to as a “related person,” has a direct or indirect material interest.

If a related person proposes to enter into such a transaction, arrangement or relationship, which we refer to as a “related person transaction,” the related person must report the proposed related person transaction to our chief legal officer. The policy calls for the proposed related person transaction to be reviewed by our chief legal officer and, if deemed appropriate, approved by our audit committee. Whenever practicable, the reporting, review and approval will occur prior to entry into the transaction. If advance review and approval is not practicable, our audit committee will review, and, in its discretion, may ratify the related person transaction. The policy also permits the chair of our audit committee to review and, if deemed appropriate, approve proposed related person transactions that arise between committee meetings, subject to ratification by our audit committee at its next meeting. Any related person transactions that are ongoing in nature will be reviewed annually.

A related person transaction reviewed under the policy will be considered approved or ratified if it is authorized by our audit committee after full disclosure of the related person’s interest in the transaction. As appropriate for the circumstances, our audit committee will review and consider:

- the related person’s interest in the related person transaction;
- the approximate dollar value of the amount involved in the related person transaction;
- the approximate dollar value of the amount of the related person’s interest in the transaction without regard to the amount of any profit or loss;
- whether the transaction was undertaken in the ordinary course of our business;
- whether the terms of the transaction are no less favorable to us than terms that could have been reached with an unrelated third party;
- the purpose of, and the potential benefits to us of, the transaction; and
- any other information regarding the related person transaction or the related person in the context of the proposed transaction that would be material to investors in light of the circumstances of the particular transaction.

Our audit committee may approve or ratify the transaction if the committee determines that, under all of the circumstances, the transaction is not inconsistent with our best interests. Our audit committee may impose any conditions on the related person transaction that it deems appropriate.

In addition to related person transactions that are excluded by the instructions to the SEC's related person transaction disclosure rule, our board has determined that the following transactions do not create a material direct or indirect interest on behalf of related persons and, therefore, are not related person transactions for purposes of this policy:

- interests arising solely from the related person's position as an executive officer of another entity (whether or not the person is also a director of such entity), that is a participant in the transaction, where (a) the related person and all other related persons own in the aggregate less than a 10% equity interest in such entity, and (b) the related person and his or her immediate family members are not involved in the negotiation of the terms of the transaction and do not receive any special benefits as a result of the transaction; and
- a transaction that is specifically contemplated by provisions of our charter or bylaws.

The policy provides that transactions involving the compensation of our executive officers shall be reviewed and approved by our compensation committee in the manner specified in its charter.

Related Person Transactions

Agreements with Genzyme Corporation

In January 2014, we entered into a global, strategic collaboration with Genzyme to discover, develop and commercialize RNAi therapeutics as genetic medicines to treat orphan diseases. In consideration for the rights granted to Genzyme under the collaboration and pursuant to the terms of a stock purchase agreement, we agreed to sell to Genzyme 8,766,338 shares of our common stock and Genzyme agreed to pay to us \$700.0 million in aggregate cash consideration, which resulted in Genzyme owning approximately 12% of our common stock upon the closing of the stock purchase in February 2014. At the closing of the stock purchase, we and Genzyme entered into an investor rights agreement, which, amongst other things, provides Genzyme with the right, subject to certain exceptions, generally to maintain its ownership position in us until Genzyme owns less than 7.5% of our outstanding common stock, subject to certain additional limited rights of Genzyme to maintain its ownership percentage. In accordance with the investor rights agreement, as a result of our issuance of shares in connection with our acquisition of Sirna Therapeutics, Inc. in March 2014, Genzyme exercised its right to purchase an additional 344,448 shares of our common stock, allowing Genzyme to maintain its ownership level of our common stock of approximately 12%. The March 2014 additional share purchase by Genzyme was approved in advance by our board of directors.

Other than the sale of shares to Genzyme in March 2014, we have not been a participant in any transaction, nor is there any currently proposed transaction, that is reportable under Item 404(a) of Regulation S-K.

INFORMATION ABOUT EXECUTIVE OFFICER AND DIRECTOR COMPENSATION

Compensation Discussion and Analysis

Our compensation committee is responsible for overseeing the total compensation of our senior management team, which is comprised of our named executive officers and all of our vice presidents. In this capacity, our compensation committee designs, implements, reviews and approves all compensation for our chief executive officer and our other named executive officers. This section discusses the principles underlying our policies and decisions with respect to the compensation of our executive officers who are named in the Summary Compensation Table below, or our “named executive officers,” and all material factors relevant to an analysis of these policies and decisions. Our named executive officers are:

- John M. Maraganore, Ph.D., our Chief Executive Officer;
- Barry E. Greene, our President and Chief Operating Officer;
- Akshay K. Vaishnav, M.D., Ph.D., our Executive Vice President and Chief Medical Officer;
- Laurence E. Reid, Ph.D., our Senior Vice President and Chief Business Officer; and
- Michael P. Mason, our Vice President of Finance and Treasurer.

Executive Summary

The goal of our compensation committee is to ensure that our compensation programs are aligned with the interests of our stockholders and our business goals and that the total compensation paid to each of our named executive officers is fair, reasonable and competitive. Key elements of our compensation programs include:

- base salary, positioned within the range of the market median to enable us to attract and retain the talent needed to continue to drive our business successfully;
- an annual cash incentive program tied to the achievement of pre-determined quantitative and qualitative corporate performance goals, under which cash incentives are only awarded if corporate performance against goals is at least 50% and awards are capped at a specified target percentage, which cap was 115% for 2013; and
- equity incentive compensation, which is provided to all employees, is typically subject to multi-year vesting based on continued service and is primarily in the form of stock options, the value of which depends on the performance of our common stock price, in order to align employee interests with those of our stockholders over the longer-term.

We target total compensation for our executives between the 50th and 75th percentiles of compensation paid to similarly situated executives of the companies in our peer group, however, because we have a pay-for-performance philosophy, actual compensation levels are correlated to the achievement of corporate and individual goals.

In addition to our direct compensation elements, the following compensation program features are designed to align our executive team with stockholder interests and market best practices:

- We do not provide for change-in-control remuneration to our employees and, as such, do not offer any tax gross-up payments to our executive team. We do not have employment agreements with any of our executive officers pursuant to which they are eligible for potential severance payments upon termination or a change-in-control of Alnylam;
- We prohibit our executive team from engaging in hedging transactions with our securities or pledging our securities; and
- We do not offer our executive team any substantially enhanced benefits or perquisites when compared to our employee population.

As described below, during 2013, we made significant progress on our clinical development and business development goals, including:

- Achieving positive clinical data in our patisiran (ALN-TTR02) Phase 2 clinical trial in patients with transthyretin-mediated amyloidosis, or ATTR, polyneuropathy, showing up to a 96% knockdown of the disease-causing protein, transthyretin, or TTR; initiating an open label extension, or OLE, study to evaluate the long-term safety and tolerability of patisiran and measure the effects of treatment toward a number of clinical endpoints; and initiating our APOLLO Phase 3 clinical trial to evaluate the efficacy and safety of patisiran in ATTR patients with familial amyloidotic polyneuropathy, or FAP;
- Achieving positive clinical data in our Phase 1 clinical trial of ALN-TTRsc, a subcutaneously administered RNAi therapeutic targeting TTR for the treatment of ATTR, in healthy volunteers, with interim data showing up to a 94% knockdown of TTR at the highest doses studied; and initiating a Phase 2 clinical trial of ALN-TTRsc in ATTR patients with TTR cardiac amyloidosis, including familial amyloidotic cardiomyopathy, or FAC, and senile systemic amyloidosis, or SSA;
- Filing a clinical trial application, or CTA, to initiate a Phase 1 clinical trial in healthy volunteers of ALN-AT3, a subcutaneously administered RNAi therapeutic targeting antithrombin, in development for the treatment of hemophilia and rare bleeding disorders, which CTA filing was delayed by one month as compared with our internal objectives;
- Selecting a development candidate for our ALN-AS1 program, which is focused on the development of a subcutaneously administered RNAi therapeutic targeting aminolevulinic acid synthase 1, or ALAS1, for the treatment of hepatic porphyrias; and
- Forming a strategic alliance with The Medicines Company to develop and commercialize RNAi therapeutics targeting proprotein convertase subtilisin/kexin type 9, or PCSK9, for the treatment of hypercholesterolemia.

In addition, as a result of positive clinical results and strong business progress, our stock price appreciated 252% during 2013. Based on our performance during 2013, our board determined that we achieved 107.5% of our corporate goals for 2013, including all of our pipeline goals, which allows us to focus our development efforts and further advance our key programs in the clinic in 2014.

Say-on-Pay Feedback from Stockholders

At our 2011 annual meeting of stockholders, a majority of our stockholders supported an annual advisory vote on our executive compensation and, in response, our board of directors determined to hold an annual vote on the matter. In 2012, we submitted our executive compensation program to an advisory vote of our stockholders and it received the support of over 90% of the total votes cast at our 2012 annual meeting of stockholders. In 2013, our executive compensation program received the support of over 94% of the total votes cast at our 2013 annual meeting of stockholders. Our compensation committee believes that the stockholders, through this advisory vote, generally endorsed our compensation philosophies and, thus, our compensation committee maintained the basic structure and design of our executive compensation program for fiscal year 2014. Our compensation committee will review the results of future annual advisory votes and consider this feedback as it completes its annual review of each pay element and the total compensation packages for our named executive officers with respect to the next fiscal year.

Determining and Setting Executive Compensation

We develop our compensation programs after reviewing publicly available compensation data and subscription survey data for our peer group, provided by Towers Watson, a compensation consulting firm engaged by our compensation committee. Our compensation committee has assessed the independence of Towers Watson consistent with NASDAQ listing standards and has concluded that the engagement of Towers Watson does not raise any conflict of interest.

Defining and Comparing Compensation to Market Benchmarks

In evaluating the total compensation of our named executive officers, our compensation committee, using information provided by Towers Watson, establishes a peer group of publicly traded, national and regional companies in the biopharmaceutical and biotechnology industries that is selected based on a balance of the following criteria:

- companies whose organizational structure, number of employees, stage of development, market capitalization, and research and development expenditures are similar, though not necessarily identical, to ours;
- companies with similar executive positions to ours;
- companies against which we believe we compete for executive talent; and
- public companies based in the United States whose compensation and financial data are available in proxy statements or other public documents.

Based on these criteria, our peer group for 2013, referred to as our 2013 peer group, was comprised of the following companies:

| | | |
|--------------------------------|---------------------------------|------------------------------|
| Acorda Pharmaceuticals, Inc. | Incyte Corporation | Neurocrine Biosciences, Inc. |
| Aegerion Pharmaceuticals, Inc. | Infinity Pharmaceuticals, Inc. | NPS Pharmaceuticals, Inc. |
| Arena Pharmaceuticals, Inc. | Isis Pharmaceuticals, Inc. | Rigel Pharmaceuticals, Inc. |
| Ariad Pharmaceuticals, Inc. | Lexicon Pharmaceuticals, Inc. | Sarepta Therapeutics, Inc. |
| Clovis Oncology, Inc. | Medivation, Inc. | Seattle Genetics, Inc. |
| Exelixis, Inc. | Merrimack Pharmaceuticals, Inc. | Synageva BioPharma Corp. |
| Idenix Pharmaceuticals, Inc. | Momenta Pharmaceuticals, Inc. | Tesaro, Inc. |
| ImmunoGen, Inc. | Nektar Therapeutics | Theravance, Inc. |

The peer group for our named executive officers is approved by our compensation committee.

We believe that the compensation practices of our 2013 peer group provided us with appropriate compensation benchmarks for evaluating the compensation of our named executive officers during 2013. Notwithstanding the similarities of the 2013 peer group to Alnylam, due to the nature of our business, we compete for executive talent with many companies that are larger and more established than we are or that possess greater resources than we do, as well as with prestigious academic and non-profit institutions. Accordingly, in 2013, our compensation committee generally targeted compensation for our executive officers as follows:

- base salaries between the 50th and 60th percentiles of the salaries in our 2013 peer group;
- annual cash incentive award opportunities at or below the 50th percentile of our 2013 peer group;
- total annual equity incentive awards, provided entirely in the form of stock options with value tied to stock price appreciation, at or above the 75th percentile of our 2013 peer group; and
- total compensation for our executives between the 50th and 75th percentiles of compensation paid to similarly situated executives of the companies in our 2013 peer group.

Our compensation committee may consider other criteria, including market factors, the experience level of the executive and the executive's performance against established corporate goals, in determining variations to this general target range.

Other Key Performance Factors in Determining Executive Compensation

As the biopharmaceutical industry is characterized by a very long product development cycle, including a lengthy research and development period and a rigorous approval phase involving human testing and governmental regulatory approval, many of the traditional benchmarking metrics, such as product sales, revenues and profits are inappropriate for a development-stage biopharmaceutical company, such as Alnylam. Instead, the specific performance factors our compensation committee considers when determining the compensation of our named executive officers include:

- key research and development achievements, including advances in RNAi delivery and technology;
- initiation and progress of clinical trials;
- achievement of regulatory milestones;
- establishment and maintenance of key strategic relationships and new business initiatives;
- filing, prosecution, defense and enforcement of key intellectual property rights;
- development of organizational capabilities; and
- financial and operating performance.

These performance factors are considered by our compensation committee in connection with our annual performance reviews described below and are a critical component in the determination of annual cash and equity incentive awards for our executives.

Annual Performance Reviews

Our compensation committee conducts an annual performance review of our named executive officers and approves the compensation of each member of our senior management team. During the first quarter of each year, annual corporate goals and individual performance objectives are determined and set forth in writing. At the beginning of the second half of each year, senior management formally reviews performance against goals for the first half of the year and re-aligns key goals for the second half of the year. At the end of each year, our compensation committee determines executive compensation levels after carefully reviewing overall corporate performance and performing a detailed evaluation of each named executive officer's annual performance against established corporate goals, as well as each individual executive officer's contributions to achievement of the corporate goals. In addition, our compensation committee may apply its discretion, as it deems appropriate, in determining executive compensation.

Annual corporate goals are proposed by our senior management team and approved by our board. For 2013, the individual objectives for our executive officers were the same as the corporate goals. Individual objectives for 2013 for the remaining members of our senior management team focused on contributions that were intended to drive achievement of the corporate goals and were proposed by each non-executive member of senior management, with review and input from our chief executive officer. Any merit increases in base salary and any annual stock option awards or cash awards made under our 2013 annual incentive program were based on the achievement of these corporate and individual performance goals and objectives. In 2013, our compensation committee established the maximum cash bonus opportunity for each member of our senior management team under the 2013 annual incentive program, representing a percentage of each individual's base salary.

During the last quarter of each year, our senior management team evaluates our corporate performance and each executive officer's individual performance, as compared to the corporate goals and, as applicable, the individual objectives for that year. Based on this evaluation, our chief executive officer recommends to our compensation committee any increases in base salary and any annual stock option awards and/or cash awards under our annual incentive program. Our compensation committee, with input from the chairman of our board, evaluates our chief executive officer's individual performance and determines whether to change his base salary, grant him an annual stock option award and/or grant him a cash award under our annual incentive program. Our

compensation committee typically grants annual stock option awards, and determines changes in base salary and the amount of any cash incentive payments, at its last regularly scheduled meeting of the year. Our compensation committee may also review the compensation of our executive officers throughout the course of the year. With respect to year-end reviews, any changes in base salary are effective at the beginning of the following year. The cash incentive payments awarded under our 2013 annual incentive program were paid in January 2014.

Compensation Objectives and Philosophy

Our compensation programs are designed to attract, motivate and retain qualified and talented executives, motivating them to achieve our business goals and rewarding them for superior short- and long-term performance. In particular, our compensation programs are intended to reward the achievement of specified pre-determined quantitative and qualitative individual and corporate performance goals and objectives and to align the interests of our senior management team with those of our stockholders in order to attain our ultimate objective of increasing stockholder value.

We award annual merit-based increases in base salary based upon an assessment of each executive's performance and the scope of his or her responsibilities. Our 2013 annual incentive program was designed to reward annual achievements as measured against pre-determined quantitative and qualitative corporate performance goals, and, with respect to non-executive officers, individual objectives. We awarded cash incentive payments to our named executive officers and the other members of our senior management team under our 2013 annual incentive program, which is described in more detail below. In 2014, our named executive officers will be eligible to receive cash awards under our 2014 annual incentive program.

We typically grant stock options to our executive officers upon commencement of their employment, annually following a review of their individual performance and in connection with a promotion. With the exception of our 2013 annual cash incentive program, we do not have any pre-established targets for allocations or apportionment by type of compensation. The mix of compensation components is designed to reward annual results as well as drive long-term company performance and create stockholder value.

Base Salary

We provide base salaries to our named executive officers to compensate them with a fair and competitive base level of compensation for services rendered during the year. Our compensation committee typically determines the base salary for each executive based on the executive's responsibilities, experience and, if applicable, the base salary level of the executive prior to joining Alnylam. In addition, our compensation committee reviews and considers the level of base salary paid by companies in our peer group for similar positions. Generally, our compensation committee believes our executives' base salaries should be targeted between the 50th and 60th percentiles of the salaries in our peer group.

Merit-based increases in base salary for all of our executive officers, other than our chief executive officer, are determined by our compensation committee based upon a written summary of the executive officer's performance and a recommendation from our chief executive officer. Any merit-based increase in base salary for our chief executive officer is based upon an assessment of his performance by our compensation committee, input from the chairman of our board and a review by our compensation committee of the base salary of chief executive officers in our peer group.

With respect to Dr. Maraganore, our chief executive officer, at the conclusion of 2012, notwithstanding the company's and Dr. Maraganore's accomplishments during the year, our compensation committee decided to accept the request by Dr. Maraganore that his base salary for 2013 remain at the same level as 2012. In December 2013, our compensation committee reviewed Dr. Maraganore's overall compensation and determined, based on his accomplishments during the year, to increase his annual base salary to \$689,585 from \$669,500.

At the end of 2013, our compensation committee approved merit increases in base salary for each of our remaining named executive officers, based upon the company's performance against the corporate goals, as well as each executive officer's individual contribution to the achievement of those corporate goals. The table below sets forth the adjustments to base salary, in dollars and as a percentage, for each of our named executive officers:

| Base Salary Adjustments | | | |
|---|-------------------------|-------------------------|---------------------|
| <u>Name</u> | <u>2013 Base Salary</u> | <u>2014 Base Salary</u> | <u>Increase (%)</u> |
| John M. Maraganore, Ph.D. | \$669,500 | \$689,585 | 3.0% |
| Barry E. Greene | \$500,000 | \$515,000 | 3.0% |
| Akshay K. Vaishnav, M.D., Ph.D. | \$450,000 | \$463,500 | 3.0% |
| Laurence E. Reid, Ph.D. | \$375,000 | \$382,500 | 2.0% |
| Michael P. Mason | \$252,144 | \$257,187 | 2.0% |

2013 Annual Incentive Program

Our compensation committee aims to determine an appropriate mix of cash payments and equity incentive awards to meet short- and long-term goals and objectives. In February 2013, our compensation committee approved the annual incentive program for 2013, including the opportunity for eligible participants to achieve incentive awards above established bonus targets based on the company's performance against 2013 corporate goals. Each bonus award for 2013 ranged from 0% to 115% of the individual's target award, thus making 115% of each individual's target award the maximum bonus award achievable in 2013.

The table below shows the target award under the incentive program as a percentage of each executive officer's annual base salary in 2013, the maximum cash award opportunity in dollars for 2013 and the actual cash bonus payments to our named executive officers for 2013 performance, which were paid in January 2014, as well as the actual bonus payment as a percentage of the maximum award opportunity. The details regarding the determination of these cash bonus awards are discussed below.

| 2013 Annual Incentive Program | | | | |
|---|---|--|----------------------------------|--|
| <u>Name</u> | <u>2013 Target Award (% of Base Salary)</u> | <u>2013 Maximum Award Opportunity (\$)</u> | <u>2013 Actual Bonus Payment</u> | <u>2013 Actual Bonus Payment (% of Target Award Opportunity)</u> |
| John M. Maraganore, Ph.D. | 60% | \$ 461,955 | \$ 431,828 | 107.5% |
| Barry E. Greene | 50% | \$ 287,500 | \$ 268,750 | 107.5% |
| Akshay K. Vaishnav, M.D., Ph.D. | 50% | \$ 258,750 | \$ 241,875 | 107.5% |
| Laurence E. Reid, Ph.D. | 40% | \$ 172,500 | \$ 161,250 | 107.5% |
| Michael P. Mason | 30% | \$ 86,989 | \$ 81,316 | 107.5% |

Under the 2013 annual incentive program, bonus awards were determined by first establishing a bonus pool. The bonus pool was calculated by aggregating the maximum awards for all eligible plan participants and then multiplying that sum by a modifier established by our compensation committee based on our performance as measured against the 2013 corporate goals. Under the 2013 annual incentive program, the corporate performance level on which such modifier was based could range from 0% to 115%, provided that if the corporate performance level for 2013 was determined to be below 50%, the program provided that the corporate performance modifier would be 0% and no awards would be granted under the incentive program. The bonus pool was then allocated among all of the plan participants in accordance with the terms of the 2013 annual incentive program. Bonus awards for our executive officers in 2013 were based upon achievement of our corporate goals. In addition, our compensation committee had the discretion under the 2013 annual incentive program to adjust upward or downward any bonus award and/or the bonus pool as it deemed appropriate.

In making its determination regarding awards under the 2013 annual incentive program, our compensation committee considered our success against our 2013 corporate goals. The 2013 corporate goals approved by our board, the relative weightings assigned to each goal at the beginning of the year, our actual achievement during the performance period as a percentage of target and the weighted performance against these corporate goals for 2013, as approved by our compensation committee and our full board, were as follows:

| 2013 Corporate Goals | Relative Weighting | Actual Achievement For 2013 (as a % of target) | Weighted Performance |
|--|--------------------|--|----------------------|
| • Execute on “Alynlam 5x15” product strategy with a focus on core programs, including: | | | |
| ○ Advance clinical development of ALN-TTR program: | | | |
| • Complete patisiran Phase 2 clinical trial and report data; | 15% | 100% | 15% |
| • Initiate patisiran Phase 2 OLE; | | | |
| • Initiate patisiran Phase 3 clinical trial in FAP patients; and | 10/25% | 100% | 25% |
| • Move ALN-TTRsc through Phase 1 clinical trial and into Pilot Phase 2 clinical trial in FAC patients. | 15% | 100% | 15% |
| ○ File CTA for ALN-AT3 and initiate a Phase 1 clinical trial. | 15% | 50% | 7.5% |
| ○ Select development candidate for ALN-AS1 program and advance ALN-AS1 towards the clinic. | 10% | 100% | 10% |
| • Execute on key partner and business objectives, including: | | | |
| ○ Form additional strategic alliances and new business ventures; and | 15% | 100% | 15% |
| ○ Support partner efforts on ALN-RSV and ALN-VSP programs. | | | |
| • Achieve a year-end cash balance of greater than \$320 million. | 20% | 100% | 20% |
| Approved 2013 Corporate Performance Level | 100/115% | | 107.5% |

Specifically, during 2013, we made significant progress on our clinical development and business development goals, including: achieving positive clinical data in our patisiran Phase 2 clinical trial in patients with ATTR polyneuropathy, showing up to a 96% knockdown of the disease-causing protein, TTR; initiating an OLE study to evaluate the long-term safety and tolerability of patisiran and measure the effects of treatment toward a number of clinical endpoints; initiating our APOLLO Phase 3 clinical trial to evaluate the efficacy and safety of patisiran in ATTR patients with FAP; achieving positive clinical data in our Phase 1 clinical trial of ALN-TTRsc in healthy volunteers, with interim data showing up to a 94% knockdown of TTR at the highest doses studied; initiating a Phase 2 clinical trial of ALN-TTRsc in ATTR patients with TTR cardiac amyloidosis, including FAC and SSA; filing a CTA to initiate a Phase 1 clinical trial of ALN-AT3 in healthy volunteers, which was delayed by one month as compared with our internal objectives; selecting a development candidate for our ALN-AS1 program, which is focused on the development of a subcutaneously administered RNAi therapeutic targeting ALAS1 for the treatment of hepatic porphyrias; and forming a strategic alliance with The Medicines Company to develop and commercialize RNAi therapeutics targeting PCSK9 for the treatment of hypercholesterolemia.

In addition, as a result of positive clinical results and strong business progress, our stock price appreciated 252% during 2013. Based on our performance during 2013, our board determined that we achieved 107.5% of our corporate goals for 2013, including all of our pipeline goals, which allows us to focus our development efforts and further advance our key programs in the clinic in 2014.

Equity Awards

Our equity awards program is designed to:

- reward demonstrated leadership and performance;
- align our executive officers' interests with those of our stockholders;
- retain our executive officers through the term of the awards;
- maintain competitive levels of executive compensation; and
- motivate our executive officers for outstanding future performance.

The market for qualified and talented executives in the biopharmaceutical industry is highly competitive and we compete for talent with many companies that have greater resources than we do. Accordingly, we believe equity compensation is a crucial component of any competitive executive compensation package we offer.

Historically, our equity awards have taken the form of stock options. We typically grant stock options to each of our executive officers upon commencement of employment, annually in conjunction with our review of individual performance and in connection with a promotion.

All stock option awards to our executive officers are approved by our compensation committee and, other than stock option awards to new hires, are typically granted at our compensation committee's regularly scheduled meeting at the end of the year. Stock option awards vary among our executive officers based on their positions and annual performance assessments. In addition, our compensation committee reviews all components of the executive's compensation to ensure that his or her total compensation is aligned with our overall philosophy and objectives. All stock options granted to our executives have exercise prices equal to the fair market value of our common stock on the date of grant, so that the recipient will not earn any compensation from his or her options unless our share price increases above the value on the date of grant. Accordingly, this portion of our executive officers' compensation is at risk and is directly aligned with stockholder value creation.

In addition, the stock options granted to our executive officers typically vest over four years, which we believe provides an incentive to our executives to add value to the company over the long-term and to remain with Alnylam. Typically, the stock options we grant to our executives have a ten-year term and vest as to 25% of the shares on the first anniversary of the grant date and as to an additional 6.25% of the shares at the end of each successive three-month period thereafter until the fourth anniversary of the grant date. Vesting of option grants to employees ceases upon termination of employment and exercise rights typically cease three months following termination of employment, except in the case of death or disability. Prior to the exercise of an option, the stock option holder does not have any rights as a stockholder with respect to the shares subject to such option, including voting rights and the right to receive dividends or dividend equivalents.

In December 2013, our compensation committee approved a stock option grant to all eligible employees which included a vesting schedule whereby 50% of the grant is time-based vesting over four years as described above, while the remaining 50% of the grant will vest in thirds upon the achievement of certain pre-determined performance milestones. One-third of the shares subject to the option will vest upon the achievement of each of three specific clinical development and regulatory events, as approved by our compensation committee:

- the start of a second Phase 3 clinical trial of an "Alnylam 5x15" program;
- achievement of positive Phase 3 clinical data in an Alnylam clinical development program; and
- the first regulatory approval for an Alnylam product.

Any determination as to whether or not a vesting event has been met shall be made in the sole discretion of our compensation committee and such date of vesting shall be the date of such determination by the committee.

In December 2013, our compensation committee also approved a supplemental stock option grant to Dr. Maraganore and Mr. Greene to recognize their leadership and performance during 2013, equal to 50% of their annual grant award amounts. This supplemental grant has a ten-year term and vests as to 25% of the shares on the first anniversary of the grant date and as to an additional 6.25% of the shares at the end of each successive three-month period thereafter until the fourth anniversary of the grant date.

In addition, in September 2013, our compensation committee approved a ten-year service award for our employees pursuant to which each individual employed by the company for ten consecutive years will receive a fully vested stock option award to purchase 10,000 shares of our common stock. Each of Dr. Maraganore and Mr. Greene received a ten-year service award in 2013.

We do not have any equity ownership guidelines for our executive officers or directors. Our insider trading policy expressly prohibits short sales and derivative transactions of our stock by our named executive officers, directors and specified other employees, including short sales of our securities, including short sales “against the box”; purchases or sales of puts, calls or other derivative securities of the company or any derivative securities that provide the economic equivalent of ownership of any of our securities or an opportunity, direct or indirect, to profit from any change in the value of our securities; or other hedging or monetization transactions accomplished through the use of prepaid variable forwards, equity swaps, collars and exchange funds. In addition, our insider trading policy expressly prohibits our named executive officers, directors and specified other employees from purchasing our securities on margin, borrowing against company securities held in a margin account, or pledging our securities as collateral for a loan.

In connection with the annual review of each executive officer’s individual performance and consistent with our compensation philosophy, our compensation committee approved annual equity incentive awards for our executive officers. The annual incentive awards granted to our named executive officers are set forth in the table below:

| 2013 Annual Equity Incentive Awards | |
|--|---------------------|
| <u>Name</u> | <u>Option Award</u> |
| John M. Maraganore, Ph.D. | 225,000* |
| Barry E. Greene | 135,000* |
| Akshay K. Vaishnav, M.D., Ph.D. | 65,000 |
| Laurence E. Reid, Ph.D. | 40,000 |
| Michael P. Mason | 10,000 |

* Includes annual award and supplemental grant.

The number of stock options granted to our named executive officers during 2013, and the value of those awards determined in accordance with Financial Accounting Standards Board, or FASB, Accounting Standards Codification, or ASC, Topic 718, are shown in the 2013 Grants of Plan-Based Awards table below.

Benefits and Other Compensation

Other compensation to our executives consists primarily of the broad-based benefits we provide to all employees, including health and dental insurance, life and disability insurance, an employee stock purchase plan and a 401(k) plan, except that executive officers are not eligible to participate in our employee stock purchase plan. Our 401(k) plan is a tax-qualified retirement savings plan pursuant to which all U.S. based employees, including executive officers, are able to contribute the lesser of up to 60% of their annual salary or the limit prescribed by the Internal Revenue Service on a before-tax basis. We match, in the form of shares of our common stock, 50% of the first 6% of a plan participant’s pay that is contributed to the plan. Our contribution is made at the end of each quarter up to an annual maximum number of shares with a value of \$5,250 for each

participant. Our matching contributions become 50% vested after the employee has been employed by us for one year and fully vested after the employee has been employed by us for two years.

Other Employment Arrangements

Pursuant to the terms of his letter of employment, Dr. Reid is entitled to a supplemental signing bonus of \$25,000 on each anniversary of his date of hire beginning in 2011 and ending in 2014, provided he continues to be our employee on each such anniversary date.

Cash Incentive Compensation for Our Named Executive Officers in 2014

In March 2014, our compensation committee approved the annual incentive program for 2014. The terms of the 2014 annual incentive program are substantially the same as the 2013 annual incentive program. The 2014 annual incentive program includes an opportunity for eligible participants to achieve up to 120% of their target award percentage based on the achievement of our 2014 corporate goals, including certain specified clinical development goals. This potential upside achievement allows us to better align our cash incentive awards with market practice while reflecting our commitment to closely managing our cash reserves.

The table below shows the target award under the incentive program as a percentage of each executive officer’s annual base salary in 2014, as well as the target cash award opportunity in dollars for 2014.

| 2014 Annual Incentive Program | | |
|--------------------------------------|---|---|
| Name | 2014 Target Award (% of Base Salary) | 2014 Target Award Opportunity (\$) |
| John M. Maraganore, Ph.D. | 60% | \$413,751 |
| Barry E. Greene | 50% | \$257,500 |
| Akshay K. Vaishnav, M.D., Ph.D. | 50% | \$231,750 |
| Laurence E. Reid, Ph.D. | 40% | \$153,000 |
| Michael P. Mason | 30% | \$ 77,156 |

Each bonus award for 2014 will range from 0% to 120% of the individual’s target award. In determining the 2014 cash incentive compensation for our named executive officers under the 2014 annual incentive program, our compensation committee will review the performance of the company during 2014. In particular, in making its determination, our compensation committee will consider our success against the following corporate goals:

| 2014 Corporate Goals | Relative Weighting |
|--|---------------------------|
| • Execute on “AInylam 5x15” and genetic medicine pipeline, including: <ul style="list-style-type: none"> ○ Continue to advance patisiran in APOLLO Phase 3 pivotal clinical trial and Phase 2 OLE study; 15% ○ Continue to advance ALN-TTRsc in Phase 2 clinical trial, initiate Phase 2 OLE study and start Phase 3 pivotal clinical trial in ATTR patients with cardiac amyloidosis; 15% ○ Start Phase 1 clinical trial with ALN-AT3 and report initial data; 15% ○ File two investigational new drug, or IND, applications from ongoing programs, including ALN-CC5, ALN-AS1 and ALN-PCSSc, in late 2014, and one IND application in early 2015; and 20% ○ Select one to two development candidates from the genetic medicine pipeline by end of 2014. 10% | |
| • Advance key manufacturing and research/platform objectives; and 10% | |
| • Achieve a year-end cash balance of greater than \$825 million. 15% | |
| Total | 100% |

The corporate performance level for 2014 will range from 0% to 120%; provided, however, that the corporate performance level can only exceed 100% upon the achievement of specified clinical development goals and further provided that, if the corporate performance level for 2014 falls below a threshold of 50%, no bonus awards will be paid under the 2014 annual incentive program.

Our compensation committee retains the discretion under the 2014 annual incentive program to adjust upward or downward any bonus award and/or the bonus pool as it deems appropriate. We expect to pay any cash incentive awards made under our 2014 annual incentive program in January 2015.

Compliance with IRS Code Section 162(m)

Section 162(m) of the Internal Revenue Code of 1986, as amended, generally disallows a tax deduction to public companies for compensation in excess of \$1 million per person paid to a company's chief executive officer and its three other officers (other than the chief/principal financial officer) whose compensation is required to be disclosed to stockholders pursuant to the Exchange Act by reason of being among the company's most highly compensated officers. Qualified performance-based compensation is not subject to the deduction limitation if specified requirements are met. We periodically review the potential effects of Section 162(m) and we consider whether to structure the performance-based portion of our executive compensation to comply with exemptions in Section 162(m), so that the compensation remains tax deductible to us. However, our compensation committee may, in its judgment, authorize compensation payments that do not comply with the exemptions in Section 162(m) when it believes that such payments are appropriate to attract, motivate and retain executive talent and are in our best interest and that of our stockholders.

Stock Option Granting Practices

Delegation to Our Chief Executive Officer

Currently, all of our employees, including our named executive officers, are eligible to participate in our Amended and Restated 2004 Stock Incentive Plan, or the 2004 Plan, and our 2009 Stock Incentive Plan, as amended, or the 2009 Plan. All new full-time employees are granted stock options when they start employment and all continuing employees are eligible for stock option awards on an annual basis based on performance and upon promotions to positions of greater responsibility. Our compensation committee has delegated to Dr. Maraganore, our chief executive officer, the authority to make stock option awards under our 2004 Plan and our 2009 Plan to new hires and in connection with promotions, other than grants to vice presidents and executive officers. The number of stock options he may grant to any one individual must be within the range specifically set by our compensation committee for these awards. The exercise price of such stock options must be equal to the closing price of our common stock on The NASDAQ Global Market on the date of grant. With respect to stock option awards to new hires other than vice presidents and executive officers, Dr. Maraganore approves the award prior to the employee's first date of employment with such authority and provides that the award is to be granted to the new hire on his or her first date of regular employment. With respect to stock option awards made in connection with promotions other than of vice presidents and executive officers, Dr. Maraganore approves the award in connection with such promotion and provides that the award is to be granted on the first business day of the calendar month following the date of such promotion; provided, however, that if such first business day is within ten calendar days of the date of such promotion, the grant date shall be the close of business on the first business day of the subsequent calendar month. Dr. Maraganore is required to maintain a list of stock options granted pursuant to such delegated authority and report to our compensation committee regarding such awards.

Report of the Compensation Committee on Executive Compensation

Our compensation committee has reviewed and discussed the "Compensation Discussion and Analysis" required by Item 402(b) of Regulation S-K with management. Based upon such review and discussions, our compensation committee recommended to our board that such section be included in this proxy statement and incorporated by reference in our Annual Report on Form 10-K for the year ended December 31, 2013, which was filed with the SEC on February 20, 2014.

By the compensation committee of the board of directors of Alnylam,
Steven M. Paul, M.D., Chair
Paul R. Schimmel, Ph.D.
Kevin P. Starr

Executive Compensation

The following table sets forth the total compensation paid or accrued for the years ended December 31, 2013, 2012 and 2011 to our named executive officers.

Summary Compensation Table

| <u>Name and Principal Position</u> | <u>Year</u> | <u>Salary (\$)</u> | <u>Bonus (\$)</u> | <u>Stock Awards \$(3)</u> | <u>Option Awards \$(4)</u> | <u>Non-Equity Incentive Plan Compensation \$(5)</u> | <u>All Other Compensation \$(6)</u> | <u>Total (\$)</u> |
|--|-------------|------------------------|-----------------------|-----------------------------------|------------------------------------|---|---|-----------------------|
| John M. Maraganore, Ph.D. <i>Chief Executive Officer (principal executive officer)</i> | 2013 | 669,500 | — | — | 5,127,198 | 431,828 | 7,596 | 6,236,122 |
| | 2012 | 669,500 | — | — | 1,424,385 | 313,327 | 8,798 | 2,416,010 |
| | 2011 | 595,076 | — | — | 561,330 | 229,868 | 11,911 | 1,398,185 |
| Barry E. Greene <i>President and Chief Operating Officer</i> | 2013 | 500,000 | — | — | 3,206,876 | 268,750 | 7,746 | 3,983,372 |
| | 2012 | 474,952 | — | — | 949,590 | 195,001 | 20,665 | 1,640,208 |
| | 2011 | 436,800 | — | — | 374,220 | 128,726 | 12,740 | 952,486 |
| Akshay K. Vaishnav, M.D., Ph.D. <i>Executive Vice President and Chief Medical Officer</i> | 2013 | 450,000 | — | — | 1,048,375 | 241,875 | 7,596 | 1,747,846 |
| | 2012 | 423,275 | — | 132,174 | 474,795 | 175,500 | 6,444 | 1,212,188 |
| | 2011 | 373,932 | — | — | 637,828 | 105,118 | 6,474 | 1,123,352 |
| Laurence E. Reid, Ph.D. <i>Senior Vice President and Chief Business Officer</i> | 2013 | 375,000 | 25,000(2) | — | 645,154 | 161,250 | 7,182 | 1,213,586 |
| | 2012 | 338,675 | 25,000(2) | 112,886 | 379,836 | 105,667 | 5,850 | 967,914 |
| | 2011 | 328,811 | 25,000(2) | — | 149,688 | 64,839 | 5,850 | 574,188 |
| Michael P. Mason (1) <i>Vice President of Finance and Treasurer (principal financial officer)</i> | 2013 | 252,144 | — | — | 161,289 | 81,316 | 6,101 | 500,850 |
| | 2012 | 247,200 | — | 82,394 | 94,959 | 57,845 | 6,204 | 488,602 |
| | 2011 | 238,061 | — | — | 202,656 | 43,685 | 6,158 | 490,560 |

- (1) In February 2011, Mr. Mason was appointed as our vice president of finance and treasurer. Mr. Mason previously served as our senior director of finance and controller.
- (2) Dr. Reid is entitled to a supplemental signing bonus of \$25,000 on each anniversary of his date of hire beginning in 2011 and ending in July 2014, provided he continues to be our employee on each such anniversary date.
- (3) In January 2012, our board of directors approved a strategic corporate restructuring pursuant to which we reduced our overall workforce by approximately 33%. In connection with the restructuring, our compensation committee approved a company-wide retention program under which each employee, other than our chief executive officer and our president and chief operating officer, received a restricted stock award equal to one-third of his or her annual base salary. The restricted stock awards served as retention vehicles as they vested in full on the second anniversary of the grant date only if the individual remained an employee of the company. The amounts reported in the Stock Awards column represent the aggregate grant date fair value of the restricted stock awards made in 2012, calculated in accordance with the provisions of FASB ASC Topic 718. We did not grant any restricted stock awards to our named executive officers in 2013 or 2011.

The amounts reported in the Summary Compensation Table for these restricted stock awards may not represent the amounts that any named executive officers will actually realize from the awards. Whether, and to what extent, a named executive officer realizes value will depend on our actual operating performance, stock price fluctuations and the named executive officer's continued employment.

- (4) The amounts reported in the Option Awards column represent the aggregate grant date fair value for the fiscal years ended December 31, 2013, 2012 and 2011 of grants of stock options to each of the named executive officers, calculated in accordance with the provisions of FASB ASC Topic 718. The assumptions we used in calculating these amounts are included in Note 8 of our audited consolidated financial statements for the year ended December 31, 2013 included in our Annual Report on Form 10-K, filed with the SEC on

February 20, 2014. To see the value actually realized by the named executive officer from stock option exercises in 2013, see the 2013 Option Exercises and Stock Vested table appearing below.

The amounts reported in the Option Awards column also include the grant date fair value of a December 18, 2013 stock option award that is subject to vesting upon the achievement of specific performance conditions, as described below under the 2013 Grants of Plan-Based Awards table. The grant date fair value of each performance-vesting stock option award was \$0. We determined that as of the date of the grant it was not probable, as defined under applicable accounting guidance, that any of the performance conditions would be achieved and assigned a grant date fair value based on this evaluation. If we had determined that as of the date of the grant it was probable that 100% of the performance conditions would be achieved, we would have assigned a grant date fair value for each of the named executive officer's performance-vesting stock option award as follows: Dr. Maraganore, \$3,078,463; Mr. Greene, \$1,847,078; Dr. Vaishnaw, \$1,334,001; Dr. Reid, \$820,924; and Mr. Mason, \$205,231.

Details of each of the stock option awards reflected above can be found in the Outstanding Equity Awards at Fiscal Year-End for 2013 table appearing below.

The amounts reported in the Summary Compensation Table for these stock option awards may not represent the amounts that the named executive officers will actually realize from the awards. Whether, and to what extent, a named executive officer realizes value will depend on our actual operating performance, stock price fluctuations and the named executive officer's continued employment.

- (5) In February 2013, our compensation committee authorized the implementation of the annual cash incentive program for fiscal year 2013. The 2013 annual cash incentive program is described above in the "Compensation Discussion and Analysis" under the heading "2013 Annual Incentive Program." In March 2012, our compensation committee authorized the implementation of the annual cash incentive program for fiscal year 2012, which was described in the "Compensation Discussion and Analysis" under the heading "2012 Annual Incentive Program," in our 2013 proxy statement, filed with the SEC on April 24, 2013. In February 2011, our compensation committee authorized the implementation of the annual cash incentive program for fiscal year 2011, which was described in the "Compensation Discussion and Analysis" under the heading "2011 Annual Incentive Program," in our 2012 proxy statement, filed with the SEC on April 27, 2012.
- (6) The amounts reported in the All Other Compensation column reflect, for each named executive officer, the sum of (i) the dollar value of life insurance premiums we paid; (ii) the amount we contributed to the 401(k) plan in respect of such executive officer; and (iii) the incremental cost to us of all perquisites and other personal benefits. Specifically, the All Other Compensation column above includes:

| Name | Year | Term Life Insurance Premiums Paid by Alnylam (\$) | Dollar Value of Alnylam Common Stock Contributed by Alnylam to the Executive's Account Under 401(k) Plan (\$) | Incremental Cost to Alnylam of All Perquisites and Other Personal Benefits (\$) |
|--|-------------|--|--|--|
| John M. Maraganore, Ph.D. <i>Chief Executive Officer</i> | 2013 | 2,346 | 5,250 | — |
| | 2012 | 1,080 | 5,250 | 2,468(a) |
| | 2011 | 1,080 | 5,250 | 5,581(a) |
| Barry E. Greene <i>President and Chief Operating Officer</i> | 2013 | 2,346 | 5,250 | 150(b) |
| | 2012 | 1,070 | 5,250 | 14,345(c) |
| | 2011 | 1,049 | 5,250 | 6,441(c) |
| Akshay K. Vaishnaw, M.D., Ph.D. <i>Executive Vice President and Chief Medical Officer</i> | 2013 | 2,346 | 5,250 | — |
| | 2012 | 864 | 5,250 | 330(b) |
| | 2011 | 864 | 5,250 | 360(b) |
| Laurence E. Reid, Ph.D. <i>Senior Vice President and Chief Business Officer</i> | 2013 | 1,932 | 5,250 | — |
| | 2012 | 600 | 5,250 | — |
| | 2011 | 600 | 5,250 | — |
| Michael P. Mason <i>Vice President of Finance and Treasurer</i> | 2013 | 491 | 5,250 | 360(b) |
| | 2012 | 594 | 5,250 | 360(b) |
| | 2011 | 548 | 5,250 | 360(b) |

- (a) Represents amounts for travel and related expenses, paid by Alnylam, including \$938 in 2012 and \$2,239 in 2011, as gross-ups for the related tax liability, for the executive's spouse to accompany the executive to certain industry events that spouses were expected to attend.
- (b) Represents amounts for an employee fitness benefit, paid by Alnylam.
- (c) Represents amounts for travel and related expenses, paid by Alnylam, including \$5,451 in 2012 and \$2,598 in 2011, as gross-ups for the related tax liability, for the executive's spouse to accompany the executive to certain industry events that spouses were expected to attend.

The following table sets forth information concerning each grant of an award made to a named executive officer during the fiscal year ended December 31, 2013 under any plan, contract, authorization or arrangement pursuant to which cash, securities, similar instruments or other property may be received:

2013 Grants of Plan-Based Awards

| Name | Date of Grant (1) | Estimated Future Payouts Under Non-Equity Incentive Plan Awards(2) | | | Estimated Future Payouts Under Equity Incentive Plan Awards(3) | | | All Other Option Awards: Number of Securities Underlying Options(4) | Exercise or Base Price of Option Awards (\$) | Grant Date Fair Value of Stock and Option Awards \$(4) |
|--|-------------------|--|-------------|--------------|--|------------|-------------|---|--|--|
| | | Threshold (\$) | Target (\$) | Maximum (\$) | Threshold (#) | Target (#) | Maximum (#) | | | |
| John M. Maraganore, Ph.D. <i>Chief Executive Officer</i> | 09/11/13 | | | | | | | 10,000(5) | 55.96 | 288,543 |
| | 12/18/13 | 0 | 401,700 | 461,955 | | | | | | |
| | 12/18/13 | | | | — | 75,000 | 75,000 | 150,000(6) | 63.00 | 4,838,655 |
| | 12/18/13 | | | | | | | | 63.00 | —(7) |
| Barry E. Greene <i>President and Chief Operating Officer</i> | 10/21/13 | | | | | | | 10,000(5) | 59.31 | 303,683 |
| | 12/18/13 | 0 | 250,000 | 287,500 | | | | | | |
| | 12/18/13 | | | | — | 45,000 | 45,000 | 90,000(6) | 63.00 | 2,903,193 |
| | 12/18/13 | | | | | | | | 63.00 | —(7) |
| Akshay K. Vaishnav, M.D., Ph.D. <i>Executive Vice President and Chief Medical Officer</i> | 12/18/13 | 0 | 225,000 | 258,750 | | | | | | |
| | 12/18/13 | | | | | | | 32,500(6) | 63.00 | 1,048,375 |
| | 12/18/13 | | | | — | 32,500 | 32,500 | | 63.00 | —(7) |
| | 12/18/13 | | | | | | | | | |
| Laurence E. Reid, Ph.D. <i>Senior Vice President and Chief Business Officer</i> | 12/18/13 | 0 | 150,000 | 172,500 | | | | | | |
| | 12/18/13 | | | | | | | 20,000(6) | 63.00 | 645,154 |
| | 12/18/13 | | | | — | 20,000 | 20,000 | | 63.00 | —(7) |
| | 12/18/13 | | | | | | | | | |
| Michael P. Mason <i>Vice President of Finance and Treasurer</i> | 12/18/13 | 0 | 75,643 | 86,989 | | | | | | |
| | 12/18/13 | | | | | | | 5,000(6) | 63.00 | 161,289 |
| | 12/18/13 | | | | — | 5,000 | 5,000 | | 63.00 | —(7) |
| | 12/18/13 | | | | | | | | | |

- (1) None of our named executive officers received restricted stock awards or stock appreciation rights in 2013. The stock option awards reported in the 2013 Grants of Plan-Based Awards table were granted pursuant to either our 2004 Plan or our 2009 Plan. Our stock plans provide that the option exercise price may not be less than 100% of the fair market value of our common stock on the date of grant.
- (2) The amounts shown in the threshold, target and maximum columns reflect the minimum, target and maximum amounts payable, respectively, under our 2013 annual cash incentive program, which is described above in the "Compensation Discussion and Analysis" under the heading "2013 Annual Incentive Program." The actual amounts paid to each named executive officer can be found above in the Summary Compensation Table under the column entitled Non-Equity Incentive Plan Compensation.
- (3) The amounts shown in the threshold, target and maximum columns reflect the minimum, target and maximum potential future payout range for stock options granted with performance-based vesting milestones. These stock options will vest in three equal installments upon the achievement of each of three specific clinical development and regulatory events. These awards are described above in the "Compensation Discussion and Analysis" under the heading "Equity Awards."
- (4) The Grant Date Fair Value, computed in accordance with FASB ASC Topic 718, represents the value of stock options granted during the year. The amounts reported in the 2013 Grants of Plan-Based Awards table for the stock option awards reflect our accounting expense, excluding the effect of estimated forfeitures, and may not represent the amounts our named executive officers will actually realize from the awards. Whether,

and to what extent, a named executive officer realizes value will depend on our actual operating performance, stock price fluctuations and that named executive officer's continued employment.

- (5) In September 2013, our compensation committee approved a ten-year service award for our employees pursuant to which each individual employed by the company for ten consecutive years will receive a fully vested stock option award to purchase 10,000 shares of our common stock. Each of Dr. Maraganore and Mr. Greene received a ten-year service award in 2013.
- (6) These stock options vest as to 25% of the shares on the first anniversary of the grant date and as to an additional 6.25% of the shares at the end of each successive three-month period thereafter until the fourth anniversary of the grant date.
- (7) We determined that as of the date of the grant it was not probable, as defined under applicable accounting guidance, that any of the performance vesting conditions for these stock option awards would be achieved and assigned a grant date fair value of \$0 based on this evaluation.

Information Relating to Equity Awards and Holdings

The following table sets forth information concerning outstanding equity awards held by each of our named executive officers on December 31, 2013.

Outstanding Equity Awards at Fiscal Year-End for 2013

| Name | Option Awards(1) | | | | | | Stock Awards(2) | |
|--|--|---|---|--|----------------------------|------------------------|--|--|
| | Grant Date | Number of Securities Underlying Unexercised Options (#) Exercisable | Number of Securities Underlying Unexercised Options (#) Unexercisable | Equity Incentive Plan Awards: Number of Securities Underlying Unexercised Unearned Options (#) | Option Exercise Price (\$) | Option Expiration Date | Number of Shares of Stock That Have Not Vested (#) | Market Value of Shares of Stock That Have Not Vested (\$)(3) |
| John M. Maraganore, Ph.D. <i>Chief Executive Officer</i> | 12/07/2004 | 137,335 | — | — | 6.78 | 12/07/2014 | | |
| | 12/21/2004 | 250,000(4) | — | — | 7.47 | 12/21/2014 | | |
| | 12/07/2005 | 125,000 | — | — | 13.12 | 12/07/2015 | | |
| | 12/14/2006 | 125,000 | — | — | 22.75 | 12/14/2016 | | |
| | 12/12/2007 | 150,600 | — | — | 31.39 | 12/12/2017 | | |
| | 12/09/2008 | 153,320 | — | — | 21.35 | 12/09/2018 | | |
| | 12/10/2009 | 105,000 | — | — | 16.43 | 12/10/2019 | | |
| | 12/08/2010 | 112,500 | 37,500 | — | 9.14 | 12/08/2020 | | |
| | 11/30/2011 | 75,000 | 75,000 | — | 7.10 | 11/30/2021 | | |
| | 12/20/2012 | 37,500 | 112,500 | — | 18.66 | 12/20/2022 | | |
| | 09/11/2013 | 10,000(5) | — | — | 55.96 | 09/11/2023 | | |
| | 12/18/2013 | — | 150,000 | — | 63.00 | 12/18/2023 | | |
| | 12/18/2013 | — | — | 75,000(6) | 63.00 | 12/18/2023 | | |
| Barry E. Greene <i>President and Chief Operating Officer</i> | 12/07/2004 | 63,800 | — | — | 6.78 | 12/07/2014 | | |
| | 12/07/2005 | 75,000 | — | — | 13.12 | 12/07/2015 | | |
| | 12/14/2006 | 60,000 | — | — | 22.75 | 12/14/2016 | | |
| | 12/12/2007 | 80,000 | — | — | 31.39 | 12/12/2017 | | |
| | 12/09/2008 | 90,000 | — | — | 21.35 | 12/09/2018 | | |
| | 12/10/2009 | 65,000 | — | — | 16.43 | 12/10/2019 | | |
| | 12/08/2010 | 75,000 | 25,000 | — | 9.14 | 12/08/2020 | | |
| | 11/30/2011 | 50,000 | 50,000 | — | 7.10 | 11/30/2021 | | |
| | 12/20/2012 | 25,000 | 75,000 | — | 18.66 | 12/20/2022 | | |
| | 10/21/2013 | 10,000(5) | — | — | 59.31 | 10/21/2023 | | |
| | 12/18/2013 | — | 90,000 | — | 63.00 | 12/18/2023 | | |
| | 12/18/2013 | — | — | 45,000(6) | 63.00 | 12/18/2023 | | |
| | Akshay K. Vaishnav, M.D., Ph.D. <i>Executive Vice President and Chief Medical Officer</i> | 01/03/2006 | 22,145 | — | — | 12.96 | 01/03/2016 | |
| 12/14/2006 | | 30,000 | — | — | 22.75 | 12/14/2016 | | |
| 12/12/2007 | | 32,750 | — | — | 31.39 | 12/12/2017 | | |
| 12/09/2008 | | 60,350 | — | — | 21.35 | 12/09/2018 | | |
| 12/10/2009 | | 45,000 | — | — | 16.43 | 12/10/2019 | | |
| 12/08/2010 | | — | 7,500 | — | 9.14 | 12/08/2020 | | |
| 06/09/2011 | | — | 37,500 | — | 9.30 | 06/09/2021 | | |
| 11/30/2011 | | — | 20,000 | — | 7.10 | 11/30/2021 | | |
| 12/20/2012 | | 12,500 | 37,500 | — | 18.66 | 12/20/2022 | | |
| 01/23/2012 | | — | — | — | — | — | 12,588 | 809,408 |
| 12/18/2013 | | — | 32,500 | — | 63.00 | 12/18/2023 | | |
| 12/18/2013 | | — | — | 32,500(6) | 63.00 | 12/18/2023 | | |
| Laurence E. Reid, Ph.D. <i>Senior Vice President and Chief Business Officer</i> | | 06/11/2010 | 135,873 | 21,875 | — | 15.99 | 06/11/2020 | |
| | 12/08/2010 | 20,692 | 6,897 | — | 9.14 | 12/08/2020 | | |
| | 11/30/2011 | 10,000 | 20,000 | — | 7.10 | 11/30/2021 | | |
| | 12/20/2012 | 10,000 | 30,000 | — | 18.66 | 12/20/2022 | | |
| | 01/23/2012 | — | — | — | — | — | 10,751 | 691,289 |
| | 12/18/2013 | — | 20,000 | — | 63.00 | 12/18/2023 | | |
| | 12/18/2013 | — | — | 20,000(6) | 63.00 | 12/18/2023 | | |
| Michael P. Mason <i>Vice President of Finance and Treasurer</i> | 12/08/2010 | 188 | 4,375 | — | 9.14 | 12/08/2020 | | |
| | 02/28/2011 | 1,687 | 7,813 | — | 10.98 | 02/28/2021 | | |
| | 11/30/2011 | — | 7,500 | — | 7.10 | 11/30/2021 | | |
| | 12/20/2012 | 2,500 | 7,500 | — | 18.66 | 12/20/2022 | | |
| | 01/23/2012 | — | — | — | — | — | 7,847 | 504,562 |
| | 12/18/2013 | — | 5,000 | — | 63.00 | 12/18/2023 | | |
| | 12/18/2013 | — | — | 5,000(6) | 63.00 | 12/18/2023 | | |

- (1) All stock option awards were granted with a ten-year term and typically vest as to 25% of the shares on the first anniversary of the grant date and as to an additional 6.25% at the end of each successive three-month period thereafter, unless otherwise noted herein.
- (2) In January 2012, our board of directors approved a strategic corporate restructuring pursuant to which we reduced our overall workforce by approximately 33%. In connection with the restructuring, our compensation committee approved a company-wide retention program under which each employee, other than our chief executive officer and our president and chief operating officer, received a restricted stock award equal to one-third of his or her annual base salary on January 23, 2012. The restricted stock awards served as retention vehicles as they vested in full on the second anniversary of the grant date only if the individual remained an employee of the company.
- (3) The market value of shares of restricted stock that have not vested is based on the number of unvested shares of restricted stock outstanding times the closing price of our common stock on The NASDAQ Global Market on December 31, 2013.
- (4) These options were granted on December 21, 2004 and, pursuant to the terms of the grant, vested in full upon the effective date of the research collaboration and license agreement with Novartis Pharma AG and its affiliate, Novartis Institutes for Biomedical Research, Inc.
- (5) These options were granted in recognition of ten years of service by the employee and were fully vested on the date of grant.
- (6) These options were granted on December 18, 2013 and will vest in three equal installments upon the achievement of each of three specific clinical development and regulatory events.

The following table sets forth information concerning the exercise of stock options during 2013 for each of our named executive officers.

2013 Option Exercises and Stock Vested

| <u>Name</u> | <u>Option Awards</u> | |
|--|--|---|
| | <u>Number of Shares Acquired on Exercise (#)</u> | <u>Value Realized on Exercise \$(1)</u> |
| John M. Maraganore, Ph.D. <i>Chief Executive Officer</i> | 191,612 | 8,927,834(2) |
| Barry E. Greene <i>President and Chief Operating Officer</i> | 82,080 | 2,410,059(2) |
| Akshay K. Vaishnav, M.D., Ph.D. <i>Executive Vice President and Chief Medical Officer</i> | 60,980 | 2,399,785 |
| Laurence E. Reid, Ph.D. <i>Senior Vice President and Chief Business Officer</i> | 27,252 | 890,484(2) |
| Michael P. Mason <i>Vice President of Finance and Treasurer</i> | 76,575 | 1,503,479 |

- (1) The value realized on exercise is based on the sales price of the shares less the applicable option exercise price.
- (2) This amount includes the value realized for exercise and hold transactions. The value realized on exercise and hold transactions is based on the market price of the shares on the date of exercise less the applicable option exercise price.

Potential Payments Upon Termination or Change-in-Control

We do not have agreements with any of our executive officers pursuant to which they are eligible for potential payments upon termination or change in control of Alnylam.

Employment Arrangements

Each executive officer has signed a nondisclosure, invention and non-competition agreement providing for the protection of our confidential information and ownership of intellectual property developed by such executive officer and a covenant not to compete with us for a period of eighteen months after termination of employment.

Pursuant to the terms of his letter of employment, we paid Dr. Reid a signing bonus of \$50,000 in July 2010. In the event that Dr. Reid either terminated his employment with us, other than for good reason, or was terminated by us for cause, within the first 24 months of his employment with us, he would have been required to repay the full amount of this signing bonus. Under his letter of employment, Dr. Reid is also entitled to a supplemental signing bonus of \$25,000 on each of the first, second, third and fourth anniversaries of his date of hire, provided he continues to be our employee on each such anniversary date.

Securities Authorized for Issuance Under Equity Compensation Plans

The following table provides information as of December 31, 2013 about the securities authorized for issuance under our equity compensation plans, consisting of our 2002 Employee, Director and Consultant Stock Option Plan (the “2002 Plan”), our 2003 Employee, Director and Consultant Stock Option Plan (the “2003 Plan”), our 2004 Plan, our 2009 Plan and our 2004 Employee Stock Purchase Plan, as amended (the “ESPP Plan”). All of our equity compensation plans were adopted with the approval of our stockholders.

Equity Compensation Plan Information

| | Number of Securities to Be Issued Upon Exercise of Outstanding Options and Rights (#) | Weighted-Average Exercise Price of Outstanding Options and Rights (\$) | Number of Securities Remaining Available for Future Issuance Under Equity Compensation Plans #(1)(2) |
|---|---|---|--|
| Equity compensation plans approved by stockholders | 8,713,395 | 24.26 | 2,655,780 |
| Equity compensation plans not approved by stockholders | — | — | — |
| Total | 8,713,395 | 24.26 | 2,655,780 |

- (1) Does not include shares of restricted stock as these are outstanding shares.
- (2) Consists of 257 shares of our common stock available for future issuance under our 2004 Plan, 2,426,554 shares of our common stock available for future issuance under our 2009 Plan and 228,969 shares of our common stock available for future issuance under our ESPP Plan. No shares of our common stock were available for issuance under our 2002 Plan or our 2003 Plan as of December 31, 2013. In addition, at December 31, 2013, there were 499,512 shares of restricted stock outstanding under our 2009 Plan with a weighted average remaining contractual life of approximately one month.

Compensation of Directors

We compensate our non-employee directors for their service as directors. We do not pay directors who are also our employees any additional compensation for their service as a director. Accordingly, Dr. Maraganore does not receive any additional compensation for his service as a director.

Our compensation committee periodically reviews the compensation we pay our non-employee directors. Our compensation committee compares our board compensation to compensation paid to non-employee directors of similarly sized public companies at a similar stage of development in the biotechnology industry. Our

compensation committee also considers the responsibilities we ask of our board members along with the amount of time required to perform those responsibilities.

Each non-employee director is entitled to receive a cash fee of \$50,000 per year. In the event any non-employee director is not eligible to accept equity compensation due to the policies of his or her employment, he or she is entitled to receive a cash fee of \$75,000 per year. The chairs of our board and our nominating and corporate governance committee are each entitled to receive an additional \$5,000 per year, the chair of our compensation committee is entitled to receive an additional \$10,000 per year, and the chairs of our audit committee and our science and technology committee are each entitled to receive an additional \$15,000 per year.

Each non-employee director is also entitled to receive upon his or her initial election to our board a stock option award for 30,000 shares of common stock, vesting annually over three years, and an additional annual stock option award to purchase 15,000 shares of common stock, vesting in full on the first anniversary of the date of grant. In addition, the chair of our audit committee is entitled to an additional stock option award to purchase 10,000 shares of common stock per year and the chair of our science and technology committee is entitled to an additional stock option award to purchase 15,000 shares of common stock per year. Our board may, in its discretion, increase or decrease the size of the award made to a director upon election or in connection with the annual stock option award or make other option awards to our directors. The exercise price of these stock options is the fair market value of our common stock on the date of grant. We also reimburse our directors for reasonable travel and other related expenses incurred in connection with their service on our board.

In September 2013, after consultation with Towers Watson, our compensation committee approved a Non-Employee Director Elective Stock Option Program, pursuant to which non-employee directors may elect to receive stock options in lieu of annual cash compensation. The Plan was effective as of January 1, 2014 and provides that non-employee directors who elect to receive stock options in lieu of annual cash compensation will receive a stock option award calculated by dividing the amount of cash compensation otherwise due for the year by the share value of the one year compounded annual growth rate of our common stock.

The following table sets forth information concerning the compensation of our non-employee directors in 2013.

Director Compensation

| Name | Fees Earned or Paid in Cash (\$) | Option Awards \$(2)(3)(4) | All Other Compensation (\$) | Total (\$) |
|-----------------------------------|--|------------------------------|-----------------------------------|---------------|
| Dennis A. Ausiello, M.D.(1) | 62,500 | 683,469 | — | 745,969 |
| John K. Clarke | 60,000 | 227,823 | — | 287,823 |
| Victor J. Dzau, M.D. | 50,000 | 227,823 | — | 277,823 |
| Marsha H. Fanucci | 50,000 | 227,823 | — | 277,823 |
| Steven M. Paul, M.D. | 60,000 | 227,823 | — | 287,823 |
| Paul R. Schimmel, Ph.D. | 50,000 | 227,823 | — | 277,823 |
| Phillip A. Sharp, Ph.D. | 65,000 | 455,646 | 25,000(5) | 545,646 |
| Kevin P. Starr | 65,000 | 379,705 | — | 444,705 |

- (1) Dr. Ausiello was elected to our board of directors in April 2012. Under his employer's policy, Dr. Ausiello was initially subject to limitations on the amount of compensation he could receive from us and was not permitted to receive any equity compensation for serving as a director. In 2013, Dr. Ausiello became eligible to receive equity compensation and his compensation was adjusted to be consistent with the non-employee director compensation described above. In June 2013, Dr. Ausiello received his on-hire stock option grant and his 2013 annual stock option grant. Dr. Ausiello also serves as a member of our scientific advisory board. He does not receive any additional compensation for such service, but is reimbursed for reasonable travel and other related expenses incurred in connection with his attendance at scientific advisory board meetings.

- (2) The amounts in this column reflect the aggregate grant date fair value for the fiscal year ended December 31, 2013, in accordance with FASB ASC Topic 718, of stock options granted under our equity plans for service on our board and treated for accounting purposes as employee awards. There can be no assurance that these amounts will ever be realized. The assumptions we used to calculate these amounts are included in Note 8 to our audited consolidated financial statements for the fiscal year ended December 31, 2013 included in our Annual Report on Form 10-K, filed with the SEC on February 20, 2014.
- (3) As of December 31, 2013, our non-employee directors held the following aggregate number of shares under outstanding stock options (representing unexercised option awards – both exercisable and unexercisable):

| <u>Name</u> | <u>Number of Shares Underlying Outstanding Stock Options for Board Service (#)</u> | <u>Number of Shares Underlying Outstanding Stock Options for Non-Board Service (#)</u> |
|-------------------------------|--|--|
| Dennis A. Ausiello, M.D. | 45,000 | — |
| John K. Clarke | 125,000 | — |
| Victor J. Dzau, M.D. | 120,000 | — |
| Marsha H. Fanucci | 75,000 | — |
| Steven M. Paul, M.D. | 75,000 | — |
| Paul R. Schimmel, Ph.D. | 75,000 | — |
| Phillip A. Sharp, Ph.D. | 170,000 | 205,000(a) |
| Kevin P. Starr | 215,000 | — |

(a) Dr. Sharp received these stock options between 2005 and 2010 in connection with his service on our scientific advisory board.

- (4) The number of shares underlying stock options granted to our non-employee directors for their service on our board during 2013 and the grant date fair value of such stock options are as follows:

| <u>Name</u> | <u>Date of Grant</u> | <u>Number of Shares Underlying Stock Option Grants in 2013 (#)</u> | <u>Grant Date Fair Value of Stock Option Grants in 2013 (\$)(a)</u> |
|-------------------------------|----------------------|--|---|
| Dennis A. Ausiello, M.D. | 06/06/2013 | 45,000 | 683,469 |
| John K. Clarke | 06/06/2013 | 15,000 | 227,823 |
| Victor J. Dzau, M.D. | 06/06/2013 | 15,000 | 227,823 |
| Marsha H. Fanucci | 06/06/2013 | 15,000 | 227,823 |
| Steven M. Paul, M.D. | 06/06/2013 | 15,000 | 227,823 |
| Paul R. Schimmel, Ph.D. | 06/06/2013 | 15,000 | 227,823 |
| Phillip A. Sharp, Ph.D. | 06/06/2013 | 30,000 | 455,646 |
| Kevin P. Starr | 06/06/2013 | 25,000 | 379,705 |

(a) The Grant Date Fair Value computed in accordance with FASB ASC Topic 718 represents the value of stock options granted during 2013. The weighted-average grant date fair value per option was \$15.19. There can be no assurance that the Grant Date Fair Value computed in accordance with FASB ASC Topic 718 will ever be realized.

- (5) This amount reflects compensation paid to Dr. Sharp for service on our scientific advisory board during 2013.

PROPOSAL 2 — ADVISORY VOTE ON EXECUTIVE COMPENSATION

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

We encourage stockholders to read closely the "Executive Compensation" section of this proxy statement beginning with the "Compensation Discussion and Analysis" on page 27, which describes in detail our executive compensation programs and the decisions made by our compensation committee and our board with respect to the fiscal year ended December 31, 2013.

As we describe in the "Compensation Discussion and Analysis," we maintain straight-forward executive compensation programs that consist almost entirely of base salary, an annual cash incentive bonus and annual equity awards. These elements of compensation have been selected by our compensation committee because the committee believes that they effectively achieve the fundamental goals of our compensation program, which are to attract, motivate and retain qualified and talented executives, who are critical to our success, motivating them to achieve our business goals and rewarding them for superior short- and long-term performance. The goal of our compensation committee is to ensure that our compensation programs are aligned with the interests of our stockholders and our business goals in order to attain our ultimate objective of increasing stockholder value. We believe that, consistent with these goals, the total compensation paid to each of our named executive officers is fair, reasonable and competitive. Further, we believe our programs do not encourage excessive risk-taking by management.

With very limited exceptions, we do not provide any compensation or benefit plans to executive officers that are not also available to other employees. We differentiate among executive officers primarily based on size of annual cash incentive awards and annual equity awards and, to a lesser extent, base salary. Annual compensation decisions for executive officers are made by our compensation committee based on the achievement of specified corporate performance goals as described under "Compensation Discussion and Analysis."

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

RESOLVED, that the compensation paid to the named executive officers of Alnylam Pharmaceuticals, Inc., as disclosed pursuant to the compensation disclosure rules of the SEC, including the compensation discussion and analysis, the compensation tables and any related material disclosed in the proxy statement of Alnylam Pharmaceuticals, Inc., is hereby approved.

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

Board Recommendation

Our board of directors recommends that you vote to approve the compensation of our named executive officers by voting "FOR" Proposal 2.

PROPOSAL 3 — RATIFICATION OF APPOINTMENT OF INDEPENDENT AUDITORS

Our board has appointed the firm of PricewaterhouseCoopers LLP, an independent registered public accounting firm, as independent auditors for the fiscal year ending December 31, 2014. Although stockholder approval of our board's appointment of PricewaterhouseCoopers LLP is not required by law, our board believes that it is advisable to give stockholders an opportunity to ratify this appointment. If this proposal is not approved at the annual meeting, our board will reconsider its appointment of PricewaterhouseCoopers LLP. Representatives of PricewaterhouseCoopers LLP are expected to be present at the annual meeting and will have the opportunity to make a statement, if they desire to do so, and will be available to respond to appropriate questions from our stockholders.

Board Recommendation

Our board of directors recommends a vote "FOR" the ratification of the appointment of PricewaterhouseCoopers LLP as our independent auditors for the fiscal year ending December 31, 2014.

OTHER MATTERS

Our board of directors does not know of any other matters which may come before the meeting. However, if any other matters are properly presented to the meeting, it is the intention of the persons named in the accompanying proxy card to vote, or otherwise act, in accordance with their judgment on those matters.

STOCKHOLDER PROPOSALS

In order to be included in the proxy materials for the 2015 annual meeting of stockholders, stockholders' proposals must be received by us at our principal executive offices, 300 Third Street, Cambridge, Massachusetts 02142 no later than December 31, 2014. We suggest that proponents submit their proposals by certified mail, return receipt requested, addressed to our Corporate Secretary.

In addition, our bylaws require that we be given advance notice of stockholder nominations for election to our board of directors and of other matters which stockholders wish to present for action at an annual meeting of stockholders, other than matters included in our proxy statement. The required notice must be in writing and received by our corporate secretary at our principal offices not later than June 27, 2015 (90 days prior to the first anniversary of our 2014 annual meeting of stockholders) and not before May 28, 2015 (120 days prior to the first anniversary of our 2014 annual meeting of stockholders). However, if the 2015 annual meeting of stockholders is advanced by more than 20 days, or delayed by more than 60 days, from the first anniversary of the 2014 annual meeting of stockholders, notice must be received not earlier than the 120th day prior to such annual meeting and not later than the close of business on the later of (1) the 90th day prior to such annual meeting and (2) the 10th day following the date on which notice of the date of such annual meeting was mailed or public disclosure of the date of such annual meeting was made, whichever occurs first. Our bylaws also specify requirements relating to the content of the notice which stockholders must provide, including a stockholder nomination for election to our board of directors, to be properly presented at the 2015 annual meeting of stockholders.

OUR BOARD OF DIRECTORS ENCOURAGES STOCKHOLDERS TO ATTEND THE ANNUAL MEETING. WHETHER OR NOT YOU PLAN TO ATTEND IN PERSON, YOU ARE URGED TO VOTE BY PROXY OVER THE INTERNET, BY TELEPHONE OR BY MAIL AS DESCRIBED IN THE ENCLOSED PROXY CARD. A PROMPT RESPONSE WILL GREATLY FACILITATE ARRANGEMENTS FOR THE ANNUAL MEETING AND YOUR COOPERATION WILL BE APPRECIATED. STOCKHOLDERS WHO ATTEND THE ANNUAL MEETING MAY VOTE THEIR STOCK PERSONALLY EVEN THOUGH THEY HAVE SUBMITTED A PROXY PREVIOUSLY.

