

**UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION  
WASHINGTON, D.C. 20549**

**SCHEDULE 14A**

**PROXY STATEMENT PURSUANT TO SECTION 14(a) OF THE  
SECURITIES EXCHANGE ACT OF 1934**

Filed by the Registrant

Filed by a Party other than the Registrant

Check the appropriate box:

- Preliminary Proxy Statement
- Definitive Proxy Statement
- Confidential, for Use of the Commission Only (as permitted by Rule 14a-6(e)(2))**
- Definitive Additional Materials
- Soliciting Material Pursuant to sec. 240.14a-11(c) or sec. 240.14a-12

**RXi PHARMACEUTICALS CORPORATION**

(Name of Registrant as Specified In Its Charter)

N/A

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

Payment of Filing Fee (Check the appropriate box):

- Fee not required.
- Fee computed on table below per Exchange Act Rules 14a-6(i)(1) and 0-11.

(1) Title of each class of securities to which transaction applies.

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(2) Aggregate number of securities to which transaction applies.

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

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(4) Proposed maximum aggregate value of transaction.

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(5) Total fee paid.

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Fee paid previously with preliminary materials.

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

(1) Amount Previously Paid.

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(2) Form, Schedule or Registration State No.:

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(3) Filing Party:

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(4) Date Filed:

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257 Simarano Drive, Suite 104  
Marlborough, MA 01752

**NOTICE OF ANNUAL MEETING OF STOCKHOLDERS**  
**To Be Held on June 2, 2014**

Dear Stockholder:

You are cordially invited to attend the 2014 Annual Meeting of Stockholders (the "**Annual Meeting**") of RXi Pharmaceuticals Corporation, a Delaware corporation (the "**Company**"), which will be held on June 2, 2014, at 11:00 a.m. local time, at the NASDAQ Stock Market's corporate headquarters at One Liberty Plaza, 165 Broadway, New York, New York 10006. Only stockholders who held stock at the close of business on the record date, April 11, 2014 (the "**Record Date**"), may vote at the Annual Meeting, including any adjournment or postponement thereof.

At the Annual Meeting, you will be asked to consider and vote upon: (1) the election of five directors; (2) the ratification of BDO USA, LLP as our independent registered public accounting firm for the fiscal year ending December 31, 2014; (3) an amendment to our Certificate of Incorporation to reduce the number of shares of common stock authorized for issuance; (4) the approval of the RXi Pharmaceuticals Corporation Employee Stock Purchase Plan; and (5) the transaction of any other business that may properly come before the meeting or any adjournment thereof. Pursuant to the Company's bylaws, no other items of business are expected to be considered at the meeting and no other director nominees will be entertained.

The accompanying Proxy Statement more fully describes the details of the business to be conducted at the Annual Meeting. After careful consideration, our Board of Directors has unanimously approved the proposals and recommends that you vote FOR each nominee and proposal described in the Proxy Statement.

We are pleased to make use of the Securities and Exchange Commission rules that allow companies to furnish proxy materials to their stockholders via the Internet. We believe the ability to deliver proxy materials electronically allows us to provide our stockholders with the information they need, while lowering the costs of delivery and reducing the environmental impact from the distribution of our Annual Meeting materials.

We look forward to seeing you at the Annual Meeting.

Sincerely,

A handwritten signature in black ink, appearing to read 'Geert Cauwenbergh', written over a horizontal line.

Geert Cauwenbergh, Dr. Med. Sc.  
President and Chief Executive Officer

April [ ], 2014

WHETHER OR NOT YOU EXPECT TO ATTEND THE MEETING, PLEASE VOTE VIA THE INTERNET OR OVER THE TELEPHONE AS INSTRUCTED IN THE **NOTICE REGARDING THE AVAILABILITY OF PROXY MATERIALS** AND ON THE ENCLOSED PROXY CARD OR, IF YOU REQUESTED AND RECEIVED A PRINTED COPY OF THE PROXY STATEMENT, COMPLETE, DATE, SIGN AND RETURN THE ENCLOSED PROXY CARD USING THE ENCLOSED RETURN ENVELOPE, AS PROMPTLY AS POSSIBLE IN ORDER TO ENSURE YOUR REPRESENTATION AT THE MEETING. EVEN IF YOU HAVE VOTED BY PROXY, YOU MAY STILL VOTE IN PERSON IF YOU ATTEND THE MEETING. PLEASE NOTE, HOWEVER, THAT IF YOUR SHARES ARE HELD OF RECORD BY A BROKER, BANK OR OTHER NOMINEE AND YOU WISH TO VOTE AT THE MEETING, YOU MUST OBTAIN A PROXY CARD ISSUED IN YOUR NAME FROM THAT INTERMEDIARY.



257 Simarano Drive, Suite 104  
Marlborough, MA 01752

**PROXY STATEMENT FOR  
2014 ANNUAL MEETING OF STOCKHOLDERS  
TO BE HELD ON JUNE 2, 2014**

**GENERAL INFORMATION**

This Proxy Statement is furnished in connection with the solicitation of proxies by the Board of Directors (the "**Board**") of RXi Pharmaceuticals Corporation ("**RXi**" or the "**Company**") for use at the Company's 2014 annual meeting of stockholders (the "**Annual Meeting**"), to be held at the NASDAQ Stock Market's corporate headquarters at One Liberty Plaza, 165 Broadway, New York, New York 10006, on June 2, 2014, at 11:00 a.m. local time. This Proxy Statement is being made available via the Internet on April 23, 2014 and the mailing date of the Notice Regarding the Availability of Proxy Materials (the "**Notice**") to our stockholders will be on or about April 23, 2014.

The Notice instructs you as to how you may access and review important information contained in the proxy materials. The Notice also instructs you on how you may submit your proxy via the Internet. If you receive a Notice by mail and would like to receive a printed copy of our proxy materials, you should follow the instructions for requesting such materials included in the Notice.

For a proxy to be effective, it must be properly executed and received prior to the Annual Meeting. Each proxy properly tendered will, unless otherwise directed by the stockholder, be voted for the proposals and nominees described in this Proxy Statement and at the discretion of the proxy holder(s) with regard to all other matters that may properly come before the meeting.

The Company will pay all of the costs of soliciting proxies. We will provide copies of our proxy materials to brokerage firms, fiduciaries and custodians for forwarding to beneficial owners who request printed copies of these materials and will reimburse these persons for their costs of forwarding these materials. Our directors, officers and employees may also solicit proxies by telephone, facsimile or personal solicitation; however, we will not pay them additional compensation for any of these services.

**Shares Outstanding and Voting Rights**

Only holders of record of our common stock ("**common stock**") at the close of business on April 11, 2014 (the "**Record Date**"), are entitled to notice of and to vote at the Annual Meeting. On the Record Date, [ ] shares of common stock were issued and outstanding. Each share of common stock is entitled to one vote on all matters to be voted upon at the Annual Meeting. Holders of common stock do not have the right to cumulative voting in the election of directors. The presence, in person or by proxy, of the holders of a majority of the outstanding shares on the Record Date will constitute a quorum for the transaction of business at the Annual Meeting and any adjournment thereof.

Persons who hold shares of our common stock directly on the Record Date ("**record holders**") must return a proxy card or attend the Annual Meeting in person in order to vote on the proposals. Persons who hold shares of our common stock indirectly on the Record Date through a brokerage firm, bank or other financial institution

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(“*beneficial holders*”) must return a voting instruction form to have their shares voted on their behalf. Brokerage firms, banks or other financial institutions that do not receive voting instructions from beneficial holders may either vote these shares on behalf of the beneficial holders or return a proxy leaving these shares un-voted (a “*broker non-vote*”).

Abstentions and broker non-votes will be counted for the purpose of determining the presence or absence of a quorum, but will not be counted for the purpose of determining the number of votes cast on a given proposal. The required vote for each of the proposals expected to be acted upon at the Annual Meeting is described below:

*Proposal No. 1 — Election of directors.* Directors are elected by a plurality, with the five nominees obtaining the most votes being elected. Because there is no minimum vote required, abstentions and broker non-votes will be entirely excluded from the vote and will have no effect on its outcome. Under the plurality vote standard, any shares that are not voted, whether by abstention, broker non-votes or otherwise, will not affect the election of directors.

*Proposal No. 2 — Ratification of independent registered public accounting firm.* This proposal must be approved by a majority of the votes cast on the matter affirmatively or negatively. As a result, abstentions and broker non-votes will be entirely excluded from the vote and will have no effect on its outcome.

*Proposal No. 3 — Reduction in authorized common stock.* This proposal requires an amendment to our Certificate of Incorporation, which requires approval by a majority of the shares of common stock issued and outstanding as of the Record Date. As a result, abstentions and broker non-votes will have the same effect as a “no” vote on the matter.

*Proposal No. 4 — Approval of the RXi Pharmaceuticals Corporation Employee Stock Purchase Plan.* This proposal must be approved by a majority of the votes cast on the matter affirmatively or negatively. As a result, abstentions and broker non-votes will be entirely excluded from the vote and will have no effect on its outcome.

We encourage you to vote by proxy, whether via telephone, through the Internet or mailing an executed proxy card. By voting in advance of the Annual Meeting, this ensures that your shares will be voted and reduces the likelihood that the Company will be forced to incur additional expenses soliciting proxies for the Annual Meeting. Any record holder of our common stock may attend the Annual Meeting in person and may revoke the enclosed form of proxy at any time by:

- executing and delivering to the corporate secretary a later-dated proxy;
- delivering a written revocation to the corporate secretary before the meeting; or
- voting in person at the Annual Meeting.

Beneficial holders of our common stock who wish to change or revoke their voting instructions should contact their brokerage firm, bank or other financial institution for information on how to do so. Beneficial holders who wish to attend the Annual Meeting and vote in person should contact their brokerage firm, bank or other financial institution holding shares of our common stock on their behalf in order to obtain a “legal proxy,” which will allow them to both attend the Annual Meeting and vote in person. Without a legal proxy, beneficial holders cannot vote at the Annual Meeting because their brokerage firm, bank or other financial institution may have already voted or returned a broker non-vote on their behalf.

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**PROPOSAL NO. 1**  
**ELECTION OF DIRECTORS**

The Amended and Restated Bylaws of the Company (the “*Bylaws*”) provide that the number of directors shall be not fewer than two and not more than five, with directors serving one year terms. The total Board size is currently fixed at five directors. Currently, the directors (whose terms expire at the 2014 annual meeting of stockholders) are Geert Cauwenbergh, Dr. Med. Sc., Keith L. Brownlie, Robert J. Bitterman, H. Paul Dorman and Curtis A. Lockshin, Ph.D. Directors elected at the Annual Meeting will hold office until the 2015 annual meeting of stockholders and until their successors are elected and qualified, unless they resign or their seats become vacant due to death, removal or other cause in accordance with the Bylaws.

As described below, the Board has nominated Drs. Cauwenbergh and Lockshin and Messrs. Brownlie, Bitterman and Dorman for reelection as directors at the Annual Meeting. All nominees have indicated their willingness to serve if elected. Should any nominee become unavailable for election at the Annual Meeting, the persons named on the enclosed proxy as proxy holders may vote all proxies given in response to this solicitation for the election of a substitute nominee chosen by the Board.

**Nomination of Directors**

The Nominating Committee reviews and recommends to the Board potential nominees for election to the Board. In reviewing potential nominees, the Nominating Committee considers the qualifications of each potential nominee in light of the Board’s existing and desired mix of experience and expertise.

After reviewing the qualifications of potential Board candidates, the Nominating Committee presents its recommendations to the Board, which selects the final director nominees. Upon the recommendation of the Nominating Committee, the Board nominated Drs. Cauwenbergh and Lockshin and Messrs. Brownlie, Bitterman and Dorman for reelection as directors. The Company did not pay any fees to any third parties to identify or assist in identifying or evaluating nominees for the Annual Meeting.

The Nominating Committee considers stockholder nominees using the same criteria set forth above. Stockholders who wish to present a potential nominee to the Nominating Committee for consideration for election at a future annual meeting of stockholders must provide the Nominating Committee with notice of the nomination and certain information regarding the candidate within the time periods set forth below under the caption “Stockholder Proposals.”

Although the Nominating Committee may consider whether nominees assist in achieving a mix of Board members that represents a diversity of background and experience, including but not limited to race, gender or national origin, we have no formal policy regarding Board diversity.

## Nominees and Incumbent Directors

The Nominating Committee has recommended and the Board has nominated Drs. Cauwenbergh and Lockshin and Messrs. Brownlie, Bitterman and Dorman to be reelected as directors at the Annual Meeting. The following table sets forth the following information for these nominees: the year each was first elected a director of the Company, their respective ages as of the date of filing of this Proxy Statement, the positions currently held with the Company and the year their current term will expire:

Nominee / Director Name and Year First Became a Director	Age	Position(s) with the Company	Year Current Term Expires
<b>Nominees for Directors:</b>			
Geert Cauwenbergh, Dr. Med. Sc. (2012)	60	President, Chief Executive Officer, acting Chief Financial Officer and Director	2014
Robert J. Bitterman (2012)	63	Chairman of the Board of Directors	2014
Keith L. Brownlie (2012)	61	Director	2014
H. Paul Dorman (2013)	77	Director	2014
Curtis A. Lockshin, Ph.D. (2013)	53	Director	2014

## Directors Nominated for Election

The following persons have been nominated by the Board to be elected as directors at the Annual Meeting.

*Geert Cauwenbergh, Dr. Med. Sc.* was appointed to the Board and was elected as President and Chief Executive Officer of the Company on April 27, 2012. Prior to joining us, from June 2011 to April 2012, Dr. Cauwenbergh was active, through his consulting company Phases123 LLC, in advising various small biotech and healthcare companies. From July 2008 to June 2011, Dr. Cauwenbergh was the Chief Executive Officer of Rhei Pharmaceuticals HK Ltd, a Chinese company that licenses western drugs for development and commercialization in China, and Managing Director of the Center for Medical Innovation, a government subsidized center for translational medicine for the Belgian Region of Flanders. In February 2008 and May 2009, Dr. Cauwenbergh founded Phases123 LLC and Aramis LLC, a dermatology company, respectively. From September 2008 to March 2010, Dr. Cauwenbergh served as a member of the board of directors of DARA Biosciences, Inc., a publicly-traded biopharmaceutical company. From 2002 to 2008, Dr. Cauwenbergh served as Chief Executive Officer and Chairman of Barrier Therapeutics, Inc., a publicly-traded biopharmaceutical company that he founded in 2001. Barrier, which focused on dermatology drug development, was acquired by Stiefel Laboratories, Inc. in 2008. Prior to founding Barrier, Dr. Cauwenbergh held a number of ascending senior management positions at Johnson & Johnson, where he was employed for 23 years. As Vice President, Research and Development for Johnson & Johnson's Skin Research Center, he was responsible for the worldwide research and development of all skin care products for the Johnson & Johnson consumer companies. He is a member of the board of directors of Moberg Derma AB, a Swedish pharmaceutical company. In February 2014, Dr. Cauwenbergh also joined the board of directors of Phosphagenics Ltd., an Australian company focused on developing new transdermal delivery systems for pharmaceutical products. Dr. Cauwenbergh currently serves as chairman of the Compensation Committee of Phosphagenics. In 2005, Dr. Cauwenbergh was inducted into the New Jersey High-Tech Hall of Fame, and, from 2009 to 2010, he served as Chairman of the Board of Trustees of BioNJ. He has authored more than 100 publications and has been a guest editor for numerous books addressing mycology and infectious diseases. Dr. Cauwenbergh received his Doctorate in Medical Sciences from the Catholic University of Leuven, Faculty of Medicine (Belgium), where he also completed his masters and undergraduate work. Based on Dr. Cauwenbergh's understanding of the business through his role as our Chief Executive Officer and as an incumbent member of the Board, as well as his extensive experience in dermatology and company-building, the Nominating Committee concluded that Dr. Cauwenbergh has the requisite experience, qualifications, attributes and skill necessary to serve as a member of the Board.

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*Keith L. Brownlie* was appointed to the Board on June 18, 2012. Prior to joining us, Mr. Brownlie was employed by the accounting firm Ernst & Young from 1974 to 2010. At Ernst & Young LLP, he served as audit partner for numerous public companies and was the Life Sciences Industry Leader for the New York Metro Area. Mr. Brownlie co-founded the New Jersey Entrepreneur of the Year Program and was co-chair of the BIONJ/PABIO Annual Symposium. Since his retirement from Ernst & Young in 2010, Mr. Brownlie has served as a member of the Board of Directors of Soligenix, Inc., which develops products to treat life-threatening side effects of cancer treatments and serious gastrointestinal diseases and vaccines for certain bioterrorism agents. Mr. Brownlie currently serves as chairman of the Audit Committee of Soligenix. From 2011 to 2013, Mr. Brownlie also served as a member of the Board of Directors of EpiCept Corporation, which focused on the development and commercialization of pharmaceutical products for the treatment of pain and cancer and merged with Immune Pharmaceuticals in August 2013. In 2013, Mr. Brownlie was appointed to the board of directors and serves as the chairman of the Audit Committee of Cancer Genetics, Inc., an emerging leader in DNA-based cancer diagnostics that personalizes the clinical management of difficult-to-diagnose cancers. Mr. Brownlie received a B.S. in Accounting from Lehigh University and is a Certified Public Accountant. Based on Mr. Brownlie's experience in the area of public company financial reporting, his responsibilities as an audit partner, which qualify him as a financial expert, and his membership on the board of directors of other public companies, the Nominating Committee concluded that Mr. Brownlie has the requisite experience, qualifications, attributes and skill necessary to serve as a member of the Board.

*Robert J. Bitterman* was appointed to the Board on June 19, 2012. Prior to joining the Company, Mr. Bitterman was employed by Aventis S.A. and its predecessor companies from 1977 to 2004 where he held various positions of increasing responsibility in financial and commercial capacities. From 1994 to 2004, Mr. Bitterman served as the President and General Manager of Aventis' Dermik Laboratories, a global, strategic business unit focused on therapeutic and aesthetic dermatology development and commercialization. From 2004 to 2005, Mr. Bitterman served as President and CEO for Isolagen, Inc., a publicly traded bioscience technology company which developed and commercialized autologous human fibroblasts targeting soft tissue enhancement. Since September 2005, Mr. Bitterman has served as the President and CEO of Cutanea Life Sciences, Inc., a wholly owned subsidiary of Maruho Company, LTD., which focuses on the development and commercialization of proprietary technologies to treat diseased and aging skin. Mr. Bitterman holds an A.B. degree in Economics from The College of the Holy Cross and a Master of Business Administration degree from Boston University. Based on Mr. Bitterman's significant leadership roles in other bioscience companies, including the role of chief executive officer, his experience with development stage organizations, and his knowledge of dermatology and the pharmaceutical industry, the Nominating Committee concluded that Mr. Bitterman has the requisite experience, qualifications, attributes and skill necessary to serve as a member of the Board.

*H. Paul Dorman* was appointed to the Board on April 18, 2013. Mr. Dorman currently serves as the Chairman and CEO of DFB Pharmaceuticals, a holdings company specializing in investing in and operating pharmaceutical businesses. From 1990 to 2012, Mr. Dorman also served as the Chairman and CEO of DPT Laboratories, a contract manufacturer and developer of pharmaceutical products. During that time, Mr. Dorman expanded DPT into a portfolio of healthcare companies that provides services and proprietary branded pharmaceutical products to the global market. Prior to acquiring DPT, Mr. Dorman was employed by Johnson & Johnson for 12 years, where he served in various positions, including Vice President and as a member of the board of directors. Prior to Johnson & Johnson, Mr. Dorman was employed by Baxter-Travenol, a large pharmaceuticals company. Mr. Dorman holds a B.S. degree in Mechanical Engineering from Tulane University and a Juris Doctor of Law from Loyola University. Based on Mr. Dorman's experience through his roles as Chairman and CEO and his deep understanding of the pharmaceutical industry in holding executive positions at large public companies, the Nominating Committee concluded that Mr. Dorman has the requisite experience, qualifications, attributes and skill necessary to serve as a member of the Board.

*Curtis A. Lockshin, Ph.D.* was appointed to the Board on April 18, 2013. Since March 2014, Dr. Lockshin has served as the Vice President of Research and Operations of Xenetic Biosciences, Inc., a biopharmaceutical company focused on developing biologic drugs and novel oncology therapeutics. Since May 2013, Dr. Lockshin

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has served as the President and CEO of Guardum Pharmaceuticals, LLC, a private pharmaceutical company. From October 2011 to February 2013, Dr. Lockshin served as Vice President of Corporate R&D Initiatives for OPKO Health, Inc., a multinational pharmaceutical and diagnostics company, at which time he then assumed the position of consultant to OPKO until December 2013. From March 2011 until December 2013, Dr. Lockshin served as a member of the board of directors for ChromaDex, Inc., a natural products company engaged in the dietary supplement, food & beverage, cosmetic and pharmaceutical industries. From October 2009 to September 2012, Dr. Lockshin served as a member of the board of directors for Sorrento Therapeutics, Inc., a development-stage biopharmaceutical company. Since April 2004, Dr. Lockshin has also served as a member of the board of directors of the Ruth K. Broad Biomedical Research Foundation. The foundation is a Duke University Support Corporation that supports basic research related to Alzheimer's disease and neurodegeneration via intramural, extramural and international grants. Since 2003, Dr. Lockshin has worked as an independent consultant, focusing on small private companies in the healthcare, biotechnology and security sectors. From August 2002 to March 2003, Dr. Lockshin held the position of Director of Discovery Biology at Beyond Genomics, Inc. (now BG Medicine, Inc.), a company engaged in the discovery of disease-associated biomarkers and identification of therapeutic targets. Dr. Lockshin held various positions from June 1998 to July 2002 at Sepracor, Inc. (now Sunovion Pharmaceuticals Inc.), a pharmaceutical company that develops therapeutic products for the central nervous system and respiratory disorders. Dr. Lockshin holds a S.B. degree in Life Sciences and a Ph.D. in Biological Chemistry from the Massachusetts Institute of Technology. Based on Dr. Lockshin's industry knowledge in the biotechnology and pharmaceutical fields and his membership on the board of directors of other public companies, the Nominating Committee concluded that Dr. Lockshin has the requisite experience, qualifications, attributes and skill necessary to serve as a member of the Board.

**Vote Required**

The five nominees who receive the greatest number of affirmative votes of the shares present in person or by proxy will be elected as directors. Any shares that are not voted, whether by abstention, broker non-votes or otherwise, will not affect the election of directors.

Holders of proxies solicited by this Proxy Statement will vote the proxies received by them as directed on the proxy card or, if no direction is made, then FOR the election of both nominees named in this Proxy Statement.

**THE BOARD OF DIRECTORS RECOMMENDS A VOTE "FOR"  
THE NOMINEES IDENTIFIED ABOVE.**

**PROPOSAL NO. 2**  
**RATIFICATION OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM**

Our Audit Committee has selected BDO USA, LLP (“**BDO**”) as our independent registered public accounting firm for the fiscal year ending December 31, 2014, and has further directed that we submit the selection of BDO for ratification by our stockholders at the Annual Meeting.

The Company is not required to submit the selection of our independent registered public accounting firm for stockholder approval. However, if the stockholders do not ratify this selection, the Audit Committee will reconsider its selection of BDO. Even if the selection is ratified, our Audit Committee may direct the appointment of a different independent registered public accounting firm at any time during the year if the Audit Committee determines that the change would be in the best interests of the Company.

The Audit Committee reviews and pre-approves all audit and non-audit services performed by its independent registered public accounting firm, as well as the fees charged for such services. All fees incurred in fiscal years 2012 and 2013 for services rendered by BDO were approved in accordance with these policies. In its review of non-audit service fees, the Audit Committee considers, among other things, the possible impact of the performance of such services on the auditor’s independence. The Audit Committee has determined that the non-audit services performed by BDO in the fiscal years ended December 31, 2012 and 2013 were compatible with maintaining the auditor’s independence. Additional information concerning the Audit Committee and its activities can be found in the “Board Committees” section of this Proxy Statement.

BDO has reviewed our interim financial statements since the quarter ended June 30, 2011 and has audited our annual financial statements since the year ended December 31, 2011. Prior to April 27, 2012, fees were billed to and paid by Galena Biopharma, Inc., our predecessor entity (“**Galena**”). Representatives of BDO are expected to be present at the Annual Meeting, will have the opportunity to make a statement if they desire to do so and will be available to respond to appropriate stockholder questions.

**Fees for Independent Registered Public Accounting Firm**

The following is a summary of the fees billed to the Company by BDO for professional services rendered for the fiscal years ended December 31, 2012 and 2013, respectively. These fees are for work invoiced in the fiscal years indicated.

	<u>2013</u>	<u>2012<sup>(1)</sup></u>
<b><i>Audit Fees:</i></b>		
Consists of fees billed for professional services rendered for the audit of the Company’s annual financial statements and the review of the interim financial statements included in the Company’s quarterly reports (together, the “ <b>Financial Statements</b> ”) and for services normally provided in connection with statutory and regulatory filings or engagements	\$149,960	\$129,203
<b><i>Other Fees:</i></b>		
<i>Audit-Related Fees</i>		
Consists of fees billed for assurance and related services reasonably related to the performance of the annual audit or review of the Financial Statements	—	—
<i>Tax Fees</i>		
Consists of fees billed for tax compliance, tax advice and tax planning	—	7,850
<i>All Other Fees</i>		
Consists of fees billed for other products and services not described above, which consisted of fees relating to: accounting policy and auditor consent	—	—
Total Other Fees	—	—
<b><i>Total All Fees:</i></b>	<u>\$149,960</u>	<u>\$137,053</u>

<sup>(1)</sup> The amounts previously reported in this fee schedule for 2012 have been reclassified to conform to the 2013 presentation.

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**Recommendation**

The Board recommends a vote “FOR” the ratification of BDO as our independent registered public accounting firm for the fiscal year ending December 31, 2014. Proxies will be so voted unless stockholders specify otherwise in their proxies.

**Vote Required**

Ratification of the selection of the independent registered public accounting firm requires the affirmative vote of a majority of the votes cast on the matter affirmatively or negatively. Abstentions and broker non-votes will be entirely excluded from the vote and will have no effect on its outcome.

**THE BOARD OF DIRECTORS RECOMMENDS A VOTE “FOR” PROPOSAL NO. 2.**

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**PROPOSAL NO. 3**  
**REDUCTION IN AUTHORIZED COMMON STOCK**

**Proposal**

Our Certificate of Incorporation currently authorizes the issuance of up to 1.5 billion shares of common stock, par value \$0.0001 (the “*common stock*”). If approved, this proposal would amend our Certificate of Incorporation to reduce the authorized common stock to 100 million shares, thereby bringing our capital structure better in line with peer companies and reducing our annual franchise tax payable in the State of Delaware. This proposal will have no impact on our currently outstanding shares.

**Background**

We were formed in September 2011 in anticipation of our spin-off from Galena, our predecessor entity. In connection with the spin-off, which was completed in April 2012, we authorized the issuance of a total of 1.5 billion shares and implemented a 1,004,397.41 for 1 split of our then-outstanding shares of common stock, resulting in the distribution in April 2012 of approximately 67 million shares to the Galena stockholders in the spin-off. Immediately following the spin-off, we had a total of approximately 795 million shares issued and outstanding, calculated on a fully-diluted basis, which reflects the assumed conversion of all outstanding shares of our convertible preferred stock, without regard to the beneficial ownership conversion limit of 9.999% that applies to our preferred stock (the “*Beneficial Ownership Conversion Limit*”).

In July 2013, in connection with a planned listing of our common stock on the NASDAQ Capital Market, we implemented a one-for-thirty reverse stock split of our outstanding common stock (the “*Reverse Stock Split*”). As a result of the Reverse Stock Split, each thirty shares of the Company’s common stock issued and outstanding immediately prior to the effective time of the Reverse Stock Split were automatically combined into and became one share of Company common stock. The Reverse Stock Split did not, however, have any effect on the total authorized common stock. Immediately following the Reverse Stock Split, we had approximately 35 million shares of common stock issued and outstanding, calculated on a fully-diluted basis (assuming the conversion of all outstanding shares of our convertible preferred stock, without regard to the Beneficial Ownership Conversion Limit). As a result of the Reverse Stock Split, we now need fewer authorized shares of common stock to fully honor the potential conversion obligations under our outstanding preferred stock, as well as to meet our projected capital stock needs for capital-raising transactions, issuance of equity-based compensation and, to the extent opportunities may arise in the future, strategic transactions that may involve our issuance of stock-based consideration. Accordingly, we are seeking to reduce our authorized common stock to 100 million shares, which will bring our capital structure better in line with peer companies and will also lower our annual franchise tax in Delaware. In 2013, our total annual franchise tax in Delaware was \$180,000, which was calculated in part based on our authorized capital stock. If we had only 100 million shares of Common Stock authorized for issuance in 2013, our annual franchise tax would have been approximately \$49,000 instead. Even with this reduced number of authorized shares, we expect that we will have a sufficient number of authorized but unissued shares to allow us to honor conversions of our preferred stock and, for at least the next several years, continue to issue additional shares of Common Stock: (i) as part of our equity-based compensation programs; (ii) to raise additional capital; and (iii) in connection with strategic transactions, including acquisitions of complementary products and technologies.

**Appraisal Rights**

No stockholder will be entitled to exercise appraisal rights or dissenter’s rights in connection with this proposal.

**Recommendation**

The Board recommends a vote “FOR” approval of the foregoing resolution. Proxies will be so voted unless stockholders specify otherwise in their proxies.

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**Vote Required**

Because this proposal requires an amendment to the Company's Certificate of Incorporation, a majority of the issued and outstanding common stock as of the Record Date must vote in favor of this proposal. As a result, abstentions and broker non-votes will have the same effect as votes against the proposal.

**THE BOARD OF DIRECTORS RECOMMENDS A VOTE "FOR" PROPOSAL NO. 3.**

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**PROPOSAL NO. 4**  
**APPROVAL OF RXI PHARMACEUTICALS CORPORATION**  
**EMPLOYEE STOCK PURCHASE PLAN**

**Background**

The Board has approved, subject to stockholder approval, the RXi Pharmaceuticals Corporation Employee Stock Purchase Plan (the “*ESPP*”). Approval of this proposal will serve as approval of the ESPP for purposes of satisfying the stockholder approval requirement of Section 423(b)(2) of the Internal Revenue Code of 1986, as amended (the “*Code*”), as more fully described below.

The ESPP gives eligible employees the opportunity to purchase shares of our common stock through payroll deductions at a discount from the market price. Upon approval by the Board, 50,000 shares of common stock became available for issuance under the ESPP. The ESPP contains an “evergreen” provision that automatically increases the number of shares authorized for issuance pursuant to the ESPP annually up to a total of a maximum of 113,333 shares of common stock. As of the Record Date, approximately [ ] employees of the Company were eligible to participate in the ESPP.

Approval of the ESPP will allow us to continue to make these benefits available to eligible employees, which our Board and management believe is an important element of the total compensation and benefits we offer to assist in the retention of our current employees and to attract new employees. It will also enable us to provide our employees with incentives to contribute to our future success by providing them an opportunity to purchase shares of our common stock.

**Interest of Certain Persons in Matters to be Acted Upon**

Each of our current executive officers identified in this Proxy Statement qualifies for participation under the ESPP. Participation in the ESPP is voluntary and depends upon each eligible employee’s election to participate, his or her determination as to the level of payroll deductions and the fair market value of Company common stock at various future dates. Accordingly, it is not possible as of the date of this Proxy Statement to accurately determine future benefits that will be received by executive officers and other employees under the ESPP.

***Summary of the RXi Pharmaceuticals Corporation Employee Stock Purchase Plan***

A summary of the key terms of the ESPP is set forth below. A complete copy of the plan is attached hereto as Exhibit A.

*Plan History.* The Board approved the ESPP on June 7, 2013, subject to the approval of the Company’s stockholders within twelve months of the date the ESPP was adopted. As of the Record Date, [ ] shares of our common stock had been issued pursuant to the ESPP and [ ] shares were currently available for future issuance, subject to annual increases pursuant to the “evergreen” provision on the ESPP. As of the Record Date, approximately [ ] employees were eligible to participate in the ESPP.

*Purpose.* The purpose of the ESPP is to provide our employees with a convenient means of acquiring an equity interest in the Company through payroll deductions, to enhance such employees’ sense of participation in our affairs and to provide these employees an incentive for continued employment.

The ESPP, including the right of participants to make purchases under the ESPP, is intended to qualify as an “Employee Stock Purchase Plan” under the provisions of Sections 421 and 423 of the Code. The provisions of the ESPP shall, accordingly, be construed so as to extend and limit participation in a manner consistent with the requirements of those sections of the Code. The ESPP is not a qualified deferred compensation plan under Section 401(a) of the Code, and is not subject to the provisions of ERISA.

*Share Reserve.* The maximum number of shares of common stock available for issuance pursuant to the ESPP is equal to the lesser of: (a) 50,000 shares, increased on each anniversary of the adoption of the ESPP by one percent (1%) of the total shares of common stock then outstanding, and (b) 113,333 shares.

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*Administration.* Our Board has delegated its authority to administer the ESPP to the Compensation Committee of the Board. The ESPP allows employees to contribute a percentage of their cash earnings, subject to certain maximum amounts, to be used to purchase shares of our common stock during two semi-annual purchase periods (each a “*Purchase Period*”). Each employee participating in the ESPP on the first day of a Purchase Period is granted a right to acquire shares of common stock during that Purchase Period.

*Payroll Deductions.* Generally, all regular employees, including executive officers, employed by us or by any subsidiary designated by the Board may participate in the ESPP and may contribute, through payroll deductions, up to the maximum percentage of their total compensation established by the Compensation Committee for the relevant Purchase Period. Common stock will be purchased for accounts of employees participating in the ESPP at a price per share equal to 90% of the fair market value per share on either (a) the date of grant of a purchase right under the ESPP or (b) the date on which the purchase right is deemed exercised, whichever is less.

*Limitations.* Eligible employees may be granted purchase rights only if the purchase rights, together with any other purchase rights granted under the ESPP, do not permit such employee’s rights to purchase our stock to accrue at a rate that exceeds \$25,000 of the fair market value of such stock for each calendar year in which such purchase rights are outstanding. No employee will be eligible for the grant of any purchase rights under the ESPP if immediately after such rights are granted, such employee would have voting power over 5% or more of our outstanding capital stock measured by vote or value.

*Changes to Capital Structure.* In the event that there is a specified type of change in our capital structure, such as a stock split, the number of shares reserved under the ESPP and the number of shares and purchase price of all outstanding purchase rights will be appropriately adjusted.

*Corporate Transactions.* In the event of certain significant corporate transactions in which the Company is not the surviving corporation or which results in the acquisition of the Company by another person, the Board will (a) if the Company is merged with or acquired by another corporation, provided that the then-outstanding rights to purchase our stock under the ESPP will be assumed, continued or substituted for by any surviving or acquiring entity (or a parent or subsidiary of such entity), (b) cancel each purchase right and return the balances in participants’ withholding accounts to the participants, or (c) end the Purchase Period on or before the date of the proposed transaction.

*U.S. Federal Income Tax Consequences.* The following is a general summary as of the date of this Proxy Statement of the U.S. federal income tax consequences to the Company and participants in the ESPP. The federal tax laws may change and the federal, state and local tax consequences for any participant will depend upon his or her individual circumstances. The summary does not address federal employment tax or other federal tax consequences that may be associated with the ESPP, nor does it cover state, local or non-U.S. taxes.

The ESPP and the right of participants to make purchases under the ESPP are intended to qualify under the provisions of Sections 421 and 423 of the Code. Under these provisions, no income will be taxable to a participant at the time of grant of a purchase right or the purchase of shares. A participant may become liable for tax upon disposition of the shares acquired, as follows.

If the shares are sold or disposed of, including by way of gift, at least two years after the offering date (the first day of the offering period during which shares were purchased) and more than one year after the date on which shares were transferred to the employee, then the lesser of (a) the excess of the fair market value of the shares subject to the option, referred to as the “option price,” or (b) ten percent of the fair market value of the shares on the offering date, will be treated as ordinary income to the participant. The employee’s basis of the stock will be increased by the amount of the compensation income recognized. Any further gain or loss upon such disposition will be treated as long-term capital gain or loss. If the shares are sold and the sales price is less than the option price, there is no ordinary income and the participant has a capital loss for the difference.

If the shares are sold or disposed of, including by way of gift or by exchange in connection with the exercise of an incentive stock option, before the expiration of the holding periods described above, then the excess of the fair market value of the shares on the date of option exercise over the option price will be treated as ordinary income to the participant. This excess will constitute ordinary income in the year of sale or other disposition even if no gain is realized on the sale or a gratuitous transfer of the shares is made. The basis of the option stock will be increased by the amount of the compensation income recognized. Any further gain or loss recognized in connection with any such sale or exchange will be treated as capital gain or loss and will be treated as short-term capital gain or loss if the shares have been held less than one year.

The Company is not entitled to a deduction for amounts taxed as ordinary income or capital gain to a participant except to the extent of ordinary income recognized upon a sale or disposition of common stock prior to the expiration of the holding periods described above.

The foregoing summary of the effect of federal income taxation upon the participant and us with respect to the shares purchased under the ESPP does not purport to be complete. Reference should be made to the applicable provisions of the Code. In addition, the summary does not discuss the tax implications of a participant's death or the provisions of the income tax laws of any municipality, state or foreign country in which the participant may reside.

#### **New Plan Benefits**

Because benefits under the ESPP depend on employees' voluntary elections to participate and the fair market value of Company common stock at various future dates, it is not possible as of the date of this Proxy Statement to accurately determine future benefits that will be received by executive officers and other employees under the ESPP. Accordingly, in lieu of providing information regarding benefits that will be received under the ESPP, the following table provides information concerning the benefits that were received by the following persons and groups during fiscal 2013: each named executive officer; all current executive officers, as a group; all current directors who are not executive officers, as a group; and all current employees who are not executive officers, as a group.

<u>Name and Principal Position</u>	<u>Dollar Value<sup>(1)</sup></u>	<u>Number of Shares</u>
Geert Cauwenbergh, Dr. Med. Sc., President, Chief Executive Officer, Chief Financial Officer and Director	\$ —	—
Pamela Pavco, Ph.D., Chief Development Officer	\$12,418	4,758
Keith L. Brownlie, Director <sup>(2)</sup>	—	—
Robert J. Bitterman, Director and Chairman of the Board <sup>(2)</sup>	—	—
H. Paul Dorman, Director <sup>(2)</sup>	—	—
Curtis A. Lockshin, Ph.D., Director <sup>(2)</sup>	—	—
All current executive officers as a group (2 persons)	\$12,418	4,758
All current non-employee directors as a group (4 persons) <sup>(2)</sup>	—	—
Non-executive officer employee group	\$16,983	6,507

<sup>(1)</sup> "Dollar Value" is the difference between the fair market value of the shares on the date a purchase right was granted under the ESPP and the participant's assumed or, if exercised, actual purchase price, which is equal to 90% of the fair market value per share on either (a) the date of grant of the purchase right or (b) the date on which the purchase right is deemed exercised, whichever is less.

<sup>(2)</sup> Members of the Board are ineligible to participate in the ESPP, unless they are also an employee of the Company.

#### **Recommendation**

The Board recommends a vote "FOR" the approval of the RXi Pharmaceuticals Corporation Employee Stock Purchase Plan. Proxies will be so voted unless stockholders specify otherwise in their proxies.

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**Vote Required**

Approval of the RXi Pharmaceuticals Corporation Employee Stock Purchase Plan requires the affirmative vote of a majority of the votes cast on the matter affirmatively or negatively. Abstentions and broker non-votes will be entirely excluded from the vote and will have no effect on its outcome.

**THE BOARD OF DIRECTORS RECOMMENDS A VOTE “FOR” PROPOSAL NO. 4.**

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## CORPORATE GOVERNANCE

### **Director Independence**

We believe that the Company benefits from having a strong and independent Board. For a director to be considered independent, the Board must determine that the director does not have any direct or indirect material relationship with the Company that would affect his or her exercise of independent judgment. On an annual basis, the Board reviews the independence of all directors under the applicable NASDAQ listing standards. The Company also considers each director's affiliations with the Company and members of management, as well as significant holdings of Company securities. This review considers all known relevant facts and circumstances in making an independence determination. Based on this review, the Board has made an affirmative determination that all directors, other than Dr. Cauwenbergh, are independent. It was determined that Dr. Cauwenbergh lacks independence because of his status as the Company's President and Chief Executive Officer.

### **Code of Business Conduct and Ethics**

We believe that our Board and committees, led by a group of strong and independent directors, provide the necessary leadership, wisdom and experience that the Company needs in making sound business decisions. Our Code of Business Conduct and Ethics helps clarify the operating standards and ethics that we expect of all of our officers, directors and employees in making and implementing those decisions. Waivers of our Code of Business Conduct and Ethics may only be granted by the Board or the Corporate Governance Committee and will be publicly announced promptly in our SEC filings. In furthering our commitment to these principles, we invite you to review our Code of Business Conduct and Ethics and other corporate governance materials located on our website at [www.rxipharma.com](http://www.rxipharma.com).

### **Stockholder Communications**

Generally, stockholders who have questions or concerns regarding the Company should contact our Investor Relations department at (508) 929-3646. However, any stockholders who wish to address questions regarding the business or affairs of the Company directly with the Board, or any individual director, should direct his or her questions in writing to the Chairman of the Board, RXi Pharmaceuticals Corporation, 257 Simarano Drive, Suite 104, Marlborough, MA 01752. Upon receipt of any such communications, the correspondence will be directed to the appropriate person, including individual directors.

## **BOARD OF DIRECTORS AND COMMITTEES**

During fiscal year 2013, our Board met six times. Each director attended at least 75% of the aggregate of the meetings of the Board and meetings of the committees of which he was a member in our last fiscal year. The Board has four standing committees: an Audit Committee, a Compensation Committee, a Corporate Governance Committee and a Nominating Committee. All members of the Audit, Compensation and Nominating Committees are non-employee directors who are deemed independent. Two of the three members of the Corporate Governance Committee are non-employee directors who are deemed independent.

Although the Company has no formal policies regarding director attendance at annual meetings, it does expect that all members of the Board will attend the 2014 Annual Meeting.

### **Board Leadership Structure and Role in Risk Oversight**

The positions of Chairman of the Board and Chief Executive Officer are separated, which allows our Chief Executive Officer to focus on our day-to-day business, while allowing the Chairman of the Board to lead the Board in its fundamental role of providing advice to and independent oversight of management. Our Board recognizes 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. Our Board also

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believes that this structure ensures a greater role for the independent directors in the oversight of our Company and active participation of the independent directors in setting agendas and establishing priorities and procedures for the work of our Board. Our Board believes its administration of its risk oversight function has not affected its leadership structure.

While our Bylaws do not require that our Chairman and Chief Executive Officer positions be separate, our Board believes that having separate positions and having an independent outside director serve as Chairman is the appropriate leadership structure for us at this time and demonstrates our commitment to good corporate governance. Our separated Chairman and Chief Executive Officer positions are augmented by our independent Board committees that provide appropriate oversight in the areas described below. At executive sessions of independent directors, these directors speak candidly on any matter of interest, which may be with or without the Chief Executive Officer present. The Board of Directors did not meet in executive session in 2013. We believe this structure provides consistent and effective oversight of our management and the Company.

The Board has overall responsibility for the oversight of the Company's risk management process, which is designed to support the achievement of organizational objectives, including strategic objectives, to improve long-term organizational performance and enhance stockholder value. Risk management includes not only understanding company-specific risks and the steps management implements to manage those risks, but also what level of risk is acceptable and appropriate for the Company. Management is responsible for establishing our business strategy, identifying and assessing the related risks and implementing appropriate risk management practices. The Board periodically reviews our business strategy and management's assessment of the related risk, and discusses with management the appropriate level of risk for the Company. The Board also delegates oversight to Board committees to oversee selected elements of risk as set forth below.

#### **Board Committees**

***Audit Committee.*** As of the Record Date, the Audit Committee was comprised of Messrs. Brownlie (Chairman) and Dorman and Dr. Lockshin. The Audit Committee selects the Company's independent registered public accounting firm, approves its compensation, oversees and evaluates the performance of the independent registered public accounting firm, oversees the accounting and financial reporting policies and internal control systems of the Company, reviews the Company's interim and annual financial statements, independent registered public accounting firm reports and management letters and performs other duties, as specified in the Audit Committee Charter, a copy of which is available on the Company's website at [www.rxipharma.com](http://www.rxipharma.com). The Audit Committee met four times in fiscal year 2013. All members of the Audit Committee satisfy the current independence and experience requirements of Rule 10A-3 of the Securities Exchange Act of 1934 (the "***Exchange Act***") and the current NASDAQ independence standards, and the Board has determined that Mr. Brownlie is an "audit committee financial expert," as the SEC has defined that term in Item 407 of Regulation S-K.

***Compensation Committee.*** As of the Record Date, the Compensation Committee was comprised of Messrs. Bitterman (Chairman) and Brownlie and Dr. Lockshin. The Compensation Committee determines compensation levels for the Company's executive officers and directors, oversees administration of the Company's equity compensation plans and performs other duties regarding compensation for employees and consultants as the Board may delegate from time to time. Our Chief Executive Officer makes recommendations to the Compensation Committee regarding the corporate and individual performance goals and objectives relevant to executive compensation and executives' performance in light of such goals and objectives, and recommends other executives' compensation levels to the Compensation Committee based on such evaluations. The Compensation Committee considers these recommendations and then makes an independent decision regarding officer compensation levels and awards. The Compensation Committee met one time in fiscal year 2013. A copy of the Compensation Committee charter is available on the Company's website at [www.rxipharma.com](http://www.rxipharma.com). All members of the Compensation Committee satisfy the current NASDAQ independence standards, and each member of the Committee qualifies as an "outside director" and "non-employee director" as defined by Section 162(m) of the Internal Revenue Code and Rule 16b-3 of the Exchange Act, respectively.

**Corporate Governance Committee.** As of the Record Date, the Corporate Governance Committee was comprised of Drs. Lockshin (Chairman) and Cauwenbergh and Mr. Bitterman. The Corporate Governance Committee oversees the Company's corporate governance principles and develops and implements policies and processes regarding corporate governance matters. The Corporate Governance Committee did not meet in fiscal year 2013. A copy of the Nominating and Governance Committees charter is available on our website at [www.rxipharma.com](http://www.rxipharma.com). Dr. Lockshin and Mr. Bitterman satisfy the current NASDAQ independence standards. Dr. Cauwenbergh lacks independence because of his status as the Company's President and Chief Executive Officer.

**Nominating Committee.** As of the Record Date, the Nominating Committee was comprised of Messrs. Dorman (Chairman), Bitterman and Brownlie. The Nominating Committee reviews potential director nominees and recommends nominees to the Board. The Nominating Committee met one time in fiscal year 2013. A copy of the Nominating and Governance Committees charter is available on our website at [www.rxipharma.com](http://www.rxipharma.com). All members of the Governance Committee satisfy the current NASDAQ independence standards.

#### EXECUTIVE OFFICERS

Our current executive officers and their respective ages and positions as of the Record Date are set forth in the following table. Biographical information regarding each executive officer who is not also a director is set forth following the table. Biographical information for Dr. Cauwenbergh is set forth above under Proposal No. 1 (Election of Directors).

<u>Name</u>	<u>Age</u>	<u>Position</u>
Geert Cauwenbergh, Dr. Med. Sc.	60	President and Chief Executive Officer
Pamela Pavco, Ph.D.	57	Chief Development Officer

*Pamela Pavco, Ph.D.* Dr. Pavco currently serves as our Chief Development Officer. Prior to this, Dr. Pavco served as our Senior Vice President of Pharmaceutical Development from September 24, 2011 until April 2012. From March 2007 to September 24, 2011, she served as the Vice President of Pharmaceutical Development of Galena Biopharma, Inc. Dr. Pavco has over 20 years of research and development experience in oligonucleotides. Dr. Pavco was Senior Director, Research and Development Project Management at Sima Therapeutics, Inc., from 2002 until 2006, when it was acquired by Merck & Co., Inc. for \$1.1 billion. While at Sima, she was responsible for the discovery research and development of Sima-027, the first chemically modified siRNA to enter clinical trials. Dr. Pavco also managed Sima's alliance with Allergan, Inc. that was initiated to continue discovery research in the area of ophthalmology and take Sima-027 forward into Phase 2 clinical studies. While at Sima, Dr. Pavco served in various additional capacities, including Director of Biology Research and Director of Pharmacology and she also managed numerous corporate collaborations and internal programs focusing on the development of therapeutic oligonucleotides in the fields of oncology, anti-angiogenesis, hepatitis, respiratory disease and Huntington's disease. Dr. Pavco has authored numerous scientific articles and contributed to approximately 58 patents and patent applications in the oligonucleotide therapeutics field. Dr. Pavco received a Ph.D. in Biochemistry from Virginia Commonwealth University in 1983 and did her post-doctoral work at Duke University. She is a member of the American Association of Cancer Research and the Association for Research and Vision in Ophthalmology.

#### CERTAIN RELATIONSHIPS AND RELATED-PARTY TRANSACTIONS

Our Board has a policy to review and approve all transactions with directors, officers and holders of more than 5% of our voting securities and their affiliates. The policy provides that, prior to Board consideration of a transaction with such a related party, the material facts as to the related party's relationship or interest in the transaction must be disclosed to the Board, and the transaction will not be considered approved by the Board unless a majority of the directors who are not interested in the transaction (if applicable) approve the transaction.

Furthermore, when stockholders are entitled to vote on a transaction with a related party, the material facts of the related party's relationship or interest in the transaction must be disclosed to the stockholders, who must approve the transaction in good faith.

#### SECTION 16(a) BENEFICIAL OWNERSHIP REPORTING COMPLIANCE

Section 16(a) of the Exchange Act requires our "officers" (as defined in Rule 16a-1(f) under the Exchange Act) and directors, and persons who own more than 10% of a registered class of our equity securities to file reports of beneficial ownership and changes in beneficial ownership with the SEC. Officers, directors and greater-than-10% stockholders (the "**Reporting Persons**") are required by SEC regulations to furnish us with copies of all reports filed under Section 16(a). Based solely on our review of copies of these reports and representations of such reporting persons, we believe that during fiscal year 2013, all Reporting Persons satisfied such applicable SEC filing requirements, other than the following filings made by Advanced RNA Technologies, LLC: a Form 3 filed on March 19, 2013 and six Form 4s disclosing a total of forty-five transactions that were not reported on a timely basis.

#### EQUITY COMPENSATION PLAN INFORMATION

The following table sets forth certain information, as of December 31, 2013, regarding the Company's 2012 Long Term Incentive Plan and the ESPP, as well as other stock options and warrants previously issued by the Company as compensation for services.

Plan Category	Number of Securities to be Issued Upon Exercise of Outstanding Options, Warrants and Rights	Weighted-Average Exercise Price of Outstanding Options, Warrants and Rights	Number of Securities Remaining Available for Future Issuance Under Equity Compensation Plans (Excluding Securities Reflected in First Column)
Equity compensation plans approved by security holders	2,556,269	\$ 3.47	2,443,731
Equity compensation plans not approved by security holders	11,265	\$ 2.61	38,735
<b>Total</b>	<b>2,567,534</b>	<b>\$ 3.04</b>	<b>2,482,466</b>

#### SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT

Based on information available to us and filings with the SEC, the following table sets forth certain information regarding the beneficial ownership (as defined by Rule 13d-3 under the Securities Exchange Act of 1934) of our outstanding common stock for (i) each of our directors, (ii) each of our "named executive officers," as defined in the Executive Compensation section below, (iii) all of our directors and executive officers as a group and (iv) persons known to us to beneficially own more than 5% of our outstanding common stock. The following information is presented as of April 1, 2014 or such other date as may be reflected below.

Beneficial ownership and percentage ownership are determined in accordance with the rules of the SEC and include voting or investment power with respect to shares of stock. This information does not necessarily indicate beneficial ownership for any other purpose. Under these rules, shares of common stock issuable under stock options or warrants that are exercisable within 60 days of April 1, 2014 are deemed outstanding for the purpose of computing the percentage ownership of the person holding the options or warrants, but are not deemed outstanding for the purpose of computing the percentage ownership of any other person.

Unless otherwise indicated and subject to applicable community property laws, to our knowledge, each stockholder named in the following table possesses sole voting and investment power over their shares of common stock, except for those jointly owned with that person's spouse. Unless otherwise indicated below, the address of each person listed on the table is c/o RXi Pharmaceuticals Corporation, 257 Simarano Drive, Suite 104, Marlborough, MA 01752.

<u>Name and Address of Beneficial Owner</u>	<u>Shares Beneficially Owned</u>	
	<u>Number<sup>(1)</sup></u>	<u>Percent of Class<sup>(2)</sup></u>
<b>Greater than 5% Holders</b>		
OPKO Health, Inc. <sup>(3)</sup> 4400 Biscayne Boulevard Miami, Florida 33137	2,241,378	16.69%
Tang Capital Partners, LP <sup>(4)</sup> 4747 Executive Drive, Suite 510 San Diego, CA 92121	1,298,094	8.82%
Advanced RNA Technologies, LLC <sup>(5)</sup> 1 Kendall Square, Building 200, Suite 2203 Cambridge, MA 02139	1,255,315	9.35%
Broadfin Capital, LLC <sup>(6)</sup> 237 Park Avenue, Suite 900 New York, New York 10017	1,126,482	8.39%
<b>Directors, Officers and Named Executive Officers:</b>		
Geert Cauwenbergh, Dr. Med. Sc. <sup>(7)</sup>	614,067	4.38%
Keith L. Brownlie <sup>(8)</sup>	45,833	*
Robert J. Bitterman <sup>(9)</sup>	47,333	*
H. Paul Dorman <sup>(10)</sup>	33,333	*
Curtis A. Lockshin, Ph.D. <sup>(11)</sup>	34,333	*
Pamela J. Pavco, Ph.D. <sup>(12)</sup>	395,099	2.86%
All current directors and executive officers as a group (six persons)	1,169,998	8.03%

\* Indicates less than 1%.

<sup>(1)</sup> Represents shares of common stock and shares of restricted stock held as of April 1, 2014 plus shares of common stock that may be acquired upon exercise of options, warrants and other rights exercisable within 60 days of April 1, 2014.

<sup>(2)</sup> Based on 13,427,167 shares of the registrant's Common Stock that were issued and outstanding as of April 1, 2014. The percentage ownership and voting power for each person (or all directors and executive officers as a group) is calculated by assuming the exercise or conversion of all options, warrants and convertible securities exercisable or convertible within 60 days of April 1, 2014 held by such person and the non-exercise and non-conversion of all outstanding warrants, options and convertible securities held by all other persons.

<sup>(3)</sup> Based solely on a Schedule 13D filed with the SEC on March 22, 2013.

<sup>(4)</sup> Based solely on a Schedule 13G/A filed with the SEC on January 16, 2014. Represents 1,298,094 shares of common stock issuable upon the conversion of shares of Series A Preferred Stock and Series A-1 Preferred Stock that are owned of record by Tang Capital Partners, LP ("TCP") as of that date. In accordance with the conversion limitation contained within the Series A Preferred Stock Certificate of Designations and the Series A-1 Preferred Stock Certificate of Designations, in no event may TCP convert shares of Series A Preferred Stock or Series A-1 Preferred Stock into shares of our common stock if such conversion would result in beneficial ownership of more than 9.999% of the then issued and outstanding shares of our common stock. This conversion limitation may not be waived and any purported conversion that is inconsistent with this conversion limitation is null and void. Tang Capital Management, LLC is the general

partner of TCP. Kevin C. Tang is the Managing Director of Tang Capital Management, LLC. Mr. Tang shares voting and investment power over the shares shown with TCP and Tang Capital Management, LLC and, as such, may be deemed to be a beneficial owner of such shares. Mr. Tang disclaims beneficial ownership of such shares, except to the extent of his pecuniary interest therein. The percent of common stock shown in the table as beneficially owned is reported as less than 9.999% due to an increase in the total shares outstanding from the date of the Schedule 13G/A filed by TCP and April 1, 2014, which is the date as of which beneficial holdings are reported.

- (5) Based solely on a Form 4 filed with the SEC on March 11, 2014. Advanced RNA Technologies, LLC is also known as Advima, LLC.
- (6) Based solely on a Schedule 13G/A filed with the SEC on February 14, 2014. Voting and dispositive power with respect to the shares is shared with Broadfin Healthcare Master Fund, Ltd. and Kevin Kotler. Kevin Kotler is the Managing Member of Broadfin Capital, LLC and Director of Broadfin Healthcare Master Fund, Ltd.
- (7) Consists of (a) 21,100 shares of common stock and (b) 592,967 shares of common stock issuable upon the exercise of options exercisable within 60 days of April 1, 2014.
- (8) Consists of 45,833 shares of common stock issuable upon the exercise of options exercisable within 60 days of April 1, 2014.
- (9) Consists of (a) 1,500 shares of common stock and (b) 45,833 shares of common stock issuable upon the exercise of options exercisable within 60 days of April 1, 2014.
- (10) Consists of 33,333 shares of common stock issuable upon the exercise of options exercisable within 60 days of April 1, 2014.
- (11) Consists of (a) 1,000 shares of common stock and (b) 33,333 shares of common stock issuable upon the exercise of options exercisable within 60 days of April 1, 2014.
- (12) Consists of (a) 7,763 shares of common stock and (b) 387,336 shares of common stock issuable upon the exercise of options exercisable within 60 days of April 1, 2014.

## EXECUTIVE COMPENSATION

The following describes the compensation earned in fiscal 2013 and 2012 by each of the executive officers identified below in the Summary Compensation Table, who are referred to collectively as our “named executive officers.” Our named executive officers with respect to the fiscal year that ended on December 31, 2013 are Geert Cauwenbergh, Dr. Med. Sc., President, Chief Executive Officer, acting Chief Financial Officer and Director, and Pamela Pavco, Ph.D., Chief Development Officer. The principal terms of our employment agreements with Drs. Cauwenbergh and Pavco are described below in the “Executive Compensation — Employment Agreements” section of this Proxy Statement.

### Summary Compensation Table

Name and Principle Position	Year	Salary (\$)	Bonus (\$)	Option Awards (\$) <sup>(1)</sup>	All Other Compensation (\$)	Total (\$)
Geert Cauwenbergh, Dr. Med. Sc. <sup>(4)</sup>	2013	368,135	— <sup>(2)</sup>	538,669	956 <sup>(5)</sup>	907,760
President and Chief Executive Officer	2012	236,769	180,000	2,114,207	535 <sup>(5)</sup>	2,531,511
Pamela Pavco, Ph.D.	2013	324,404	— <sup>(2)</sup>	264,001	300 <sup>(3)</sup>	588,705
Chief Development Officer	2012	300,000	90,000	1,590,561	275 <sup>(3)</sup>	1,980,836

- (1) The amounts shown reflect the grant date fair value computed in accordance with FASB ASC 718 for the indicated year, adjusted to disregard the effects of any estimate of forfeitures related to service-based vesting. The assumptions we used in valuing options are described more fully in the “Management’s Discussion and Analysis” section and the Notes to Financial Statements included in our Annual Report on Form 10-K for the fiscal year ended December 31, 2013.
- (2) The amount of bonus is expected to be determined on June 2, 2014 at the Annual Meeting.
- (3) Represents amounts for the dollar value of life insurance premiums paid.
- (4) Dr. Cauwenbergh was appointed our President and Chief Executive Officer on April 27, 2012. As such, figures for fiscal 2012 are stated as of April 27, 2012.

(5) Represents amounts for the dollar value of life insurance premiums paid and a gross-up for the related tax liability in connection with Dr. Cauwenbergh's health insurance premiums.

### Outstanding Equity Awards at Fiscal Year-End

The following table shows information regarding outstanding equity awards at December 31, 2013 for our named executive officers:

Name	Option Awards				Number of Shares or Units of Stock that Have Not Vested (#)	Market Value of Shares or Units of Stock that Have Not Vested (\$) <sup>(1)</sup>
	Number of Securities Underlying Unexercised Options		Option Exercise Price (\$)	Option Expiration Date		
	Exercisable	Unexercisable				
Geert Cauwenbergh, Dr. Med. Sc. <sup>(2)</sup>	474,374	664,132	\$ 2.55	06/08/2022	664,132	\$ 1,925,983
Geert Cauwenbergh, Dr. Med. Sc. <sup>(3)</sup>	—	133,334	\$ 6.00	06/07/2023	133,334	\$ 386,669
Pamela Pavco, Ph.D. <sup>(4)</sup>	313,925	244,166	\$ 3.90	05/04/2022	244,166	\$ 708,081
Pamela Pavco, Ph.D. <sup>(5)</sup>	8,334	58,333	\$ 6.00	06/07/2023	58,333	\$ 169,166

(1) Calculated by multiplying the number of unvested shares by \$2.90, the closing price per share of our common stock on the OTCQB on December 31, 2013.

(2) Dr. Cauwenbergh's options vest in a one-quarter installment of 284,627 shares on April 27, 2013 and 35 equal monthly installments thereafter of 23,718 shares beginning on May 27, 2013 with the last monthly installment of 23,750 shares on April 27, 2016.

(3) These options were granted on June 7, 2013. The options vest in a one-quarter installment on the one year anniversary of the grant date and in monthly installments thereafter over the remaining three years until June 7, 2017.

(3) Dr. Pavco's option vests in equal monthly installments of 1,388 beginning on the first monthly anniversary of the grant date, with the last monthly installment of 1,430 shares on May 7, 2017.

(4) These options were granted on June 7, 2013. The options vest in monthly installments over four years beginning on the first monthly anniversary of the grant date until Jun 7, 2017.

### Nonqualified Deferred Compensation

We do not have any nonqualified deferred compensation plans.

### Employment and Change of Control Agreements

#### *Geert Cauwenbergh, Dr. Med. Sc.*

Dr. Cauwenbergh was appointed Chief Executive Officer pursuant to an employment agreement, dated April 27, 2012, pursuant to which he is entitled to receive an initial base salary of \$360,000 per annum, as well as a performance bonus of up to 50% of his base salary, subject to the achievement of performance goals to be established annually. On June 8, 2012, Dr. Cauwenbergh received an option entitling him to purchase 1,138,506 shares of Company common stock at an exercise price equal to the fair value of the underlying common stock on the date of grant. The option will vest and become exercisable with respect to one quarter of the underlying shares on April 27, 2013, and then on a ratable basis monthly thereafter over the next three years such that the option is fully vested and exercisable on April 27, 2016.

Dr. Cauwenbergh's employment agreement provides that, upon termination of Dr. Cauwenbergh's employment without "cause" (as defined) by us or by Dr. Cauwenbergh for "good reason" (as defined), he will be entitled to payment of: (1) any accrued but unpaid salary, business expenses and unused vacation as of the date of his termination as well as any unpaid bonus compensation awarded for the prior year; (2) six months of salary from the date of termination; and (3) continued participation, at our expense, during the applicable severance period in our sponsored group medical and dental plans. In the event his employment is terminated within twelve months following a "change of control" of RXi, he will be entitled to: (x) twelve months of salary from the date of termination; (y) accelerated vesting of any unvested RXi stock options held by him; and (z) continued participation, at our expense, during the severance period in our sponsored group medical and dental plans.

***Pamela Pavco, Ph.D.***

Dr. Pavco serves as our Chief Development Officer. Under her employment agreement dated September 24, 2011, Dr. Pavco receives an annual salary of \$300,000. She also received an option to purchase up to 558,091 shares of common stock at an exercise price equal to the fair value of the underlying common stock on the date of grant. The option vests in equal monthly installments of 11,626 shares beginning on October 24, 2011 with a final monthly installment of 11,669 shares on September 24, 2015, subject to accelerated vesting in some events.

Dr. Pavco's employment agreement provides that, upon termination of Dr. Pavco's employment without "cause" (as defined) by us or by Dr. Pavco for "good reason" (as defined), she will be entitled to payment of: (1) any accrued but unpaid salary and unused vacation as of the date of her termination; (2) twelve months (in the event of such termination within twelve months of the effective date of her employment) or six months (in the event of such termination after twelve months from the effective date of her employment), as the case may be, of salary from the date of termination; and (3) continued participation, at our expense, during the applicable severance period in our sponsored group medical and dental plans. In the event her employment is terminated within twelve months following a "change of control" of RXi, she will be entitled to: (x) twelve months of salary from the date of termination; (y) accelerated vesting of any unvested RXi stock options held by her as to 50% of the unvested option shares or the portion of the unvested option shares that would have vested over the following twenty-four months, whichever is greater; and (z) continued participation, at our expense, during the severance period in our sponsored group medical and dental plans.

**DIRECTOR COMPENSATION**

As our only director who is also an employee, Dr. Cauwenbergh receives no separate compensation for Board service. A description of our non-employee director compensation is set forth below.

Annual Cash Retainer	\$ 25,000 (paid quarterly)
Annual Cash Retainer for Chairman of the Board and Audit Committee	\$ 10,000 (paid quarterly)
Annual Cash Retainer for Chairman of Nominating and Governance Committees	\$ 5,000 (paid quarterly)
Initial Option Grant	33,000 shares <sup>(1)</sup>
Annual Option Grant	16,666 shares <sup>(1)</sup>

<sup>(1)</sup> Options vest on a ratable quarterly basis over a one-year period from the date of grant.

Non-employee directors are also reimbursed for their travel and reasonable out-of-pocket expenses incurred in connection with attending Board and committee meetings and in attending continuing education seminars, to the extent that attendance is required by the Board or the committee(s) on which that director serves.

The Compensation Committee and the Board reassesses the appropriate level of equity compensation for non-employee directors on an annual basis. Future equity compensation payments will be determined on a year-by-year basis for the foreseeable future due to the volatility of the Company's stock price.

The following table shows the compensation paid in fiscal year 2013 to the Company's non-employee directors:

<u>Director Compensation</u>			
<u>Name</u>	<u>Fees Earned or Paid in Cash</u>	<u>Option Awards(\$)<sup>(1)</sup></u>	<u>Total (\$)</u>
Keith L. Brownlie	\$ 27,500	61,668	89,168
Robert J. Bitterman	\$ 27,500	61,668	89,168
H. Paul Dorman <sup>(2)</sup>	\$ 20,000	147,332	167,332
Curtis A. Lockshin, Ph.D. <sup>(2)</sup>	\$ 20,000	147,332	167,332

<sup>(1)</sup> The value of the option awards has been computed in accordance with FASB ASC 718, excluding the effect of estimated forfeitures. The assumptions we used in valuing options are described more fully in the "Management's Discussion and Analysis" section and the Notes to Financial Statements included in our Annual Report on Form 10-K for the fiscal year ended December 31, 2013.

<sup>(2)</sup> Mr. Dorman and Dr. Lockshin were appointed to the Board on April 18, 2013.

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## REPORT OF THE AUDIT COMMITTEE

The Audit Committee evaluates auditor performance, manages relations with the Company's independent registered public accounting firm, and evaluates policies and procedures relating to internal control systems. The Audit Committee operates under a written Audit Committee Charter that has been adopted by the Board, a copy of which is available on the Company's website at [www.rxipharma.com](http://www.rxipharma.com). All members of the Audit Committee currently meet the independence and qualification standards for Audit Committee membership set forth in the listing standards provided by NASDAQ and the SEC.

Other than Mr. Brownlie, the Audit Committee members are not professional accountants or auditors. The members' functions are not intended to duplicate or to certify the activities of management and the independent registered public accounting firm. The Audit Committee serves a Board-level oversight role in which it provides advice, counsel and direction to management and the auditors on the basis of the information it receives, discussions with management and the auditors, and the experience of the Audit Committee's members in business, financial and accounting matters.

The Audit Committee oversees the Company's financial reporting process on behalf of the Board. The Company's management has the primary responsibility for the financial statements and reporting process, including the Company's system of internal controls. In fulfilling its oversight responsibilities, the Audit Committee reviewed with management the audited financial statements included in the Annual Report on Form 10-K for the fiscal year ended December 31, 2013. This review included a discussion of the quality and the acceptability of the Company's financial reporting, including the nature and extent of disclosures in the financial statements and the accompanying notes. The Audit Committee also reviewed the progress and results of the testing of the design and effectiveness of its internal controls over financial reporting pursuant to Section 404 of the Sarbanes-Oxley Act of 2002.

The Audit Committee also reviewed with the Company's independent registered public accounting firm, which is responsible for expressing an opinion on the conformity of the audited financial statements with accounting principles generally accepted in the United States of America, their judgments as to the quality and the acceptability of the Company's financial reporting and such other matters as are required to be discussed with the Committee under generally accepted auditing standards, including the Public Company Accounting Oversight Board Auditing Standard No.16, *Communications with Audit Committees*. The Audit Committee has received the written disclosures and the letter from the independent registered public accounting firm required by the Public Company Accounting Oversight Board. The Audit Committee discussed with the independent registered public accounting firm their independence from management and the Company, including the matters required by the applicable rules of the Public Company Accounting Oversight Board.

In addition to the matters specified above, the Audit Committee discussed with the Company's independent registered public accounting firm the overall scope, plans and estimated costs of their audit. The Committee met with the independent registered public accounting firm periodically, with and without management present, to discuss the results of the independent registered public accounting firm's examinations, the overall quality of the Company's financial reporting and the independent registered public accounting firm's reviews of the quarterly financial statements, and drafts of the quarterly and annual reports.

In reliance on the reviews and discussions referred to above, the Audit Committee recommended to the Board that the Company's audited financial statements should be included in the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2013.

Keith L. Brownlie  
H. Paul Dorman  
Curtis A. Lockshin

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## OTHER BUSINESS

We know of no other matters to be submitted to a vote of stockholders at the Annual Meeting. If any other matter is properly brought before the Annual Meeting or any adjournment thereof, it is the intention of the persons named in the enclosed proxy to vote the shares they represent in accordance with their judgment. In order for any stockholder to nominate a candidate or to submit a proposal for other business to be acted upon at a given annual meeting, he or she must provide timely written notice to our corporate secretary in the form prescribed by our Bylaws, as described below.

## STOCKHOLDER PROPOSALS

Stockholder proposals intended to be included in the 2015 annual meeting proxy materials must be received by the Secretary of the Company no later than January 23, 2015, or otherwise as permitted by applicable law (the "**Proxy Deadline**"). The form and substance of these proposals must satisfy the requirements established by the Company's Bylaws and the SEC, and the timing for the submission of any such proposals may be subject to change as a result of changes in SEC rules and regulations.

Additionally, stockholders who intend to present a stockholder proposal at the 2015 annual meeting must provide the Secretary of the Company with written notice of the proposal not fewer than 90 nor more than 120 days prior to the anniversary date of the 2014 annual meeting, *provided, however*, that if the 2015 annual meeting date is more than 30 days before or after the anniversary date of the 2014 annual meeting, then stockholders must provide notice on or before 10 days after the day on which the date of the 2015 annual meeting is first disclosed in a public announcement. Notice must be tendered in the proper form prescribed by our Bylaws. Proposals not meeting the requirements set forth in our Bylaws will not be entertained at the meeting.

Additionally, any stockholder seeking to recommend a director candidate or any director candidate who wishes to be considered by the Nominating Committee, the committee that recommends a slate of nominees to the Board for election at each annual meeting, must provide the Secretary of the Company with a completed and signed biographical questionnaire on or before the Proxy Deadline. Stockholders can obtain a copy of this questionnaire from the Secretary of the Company upon written request. The Nominating Committee is not required to consider director candidates received after this date or without the required questionnaire. The Nominating Committee will consider all director candidates who comply with these requirements and will evaluate these candidates using the criteria described above under the caption, "Nomination of Directors." Director candidates who are then approved by the Board will be included in the Company's proxy statement for that annual meeting.

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## DELIVERY OF PROXY MATERIALS

Our Annual Report to stockholders for the fiscal year ended December 31, 2013, including audited financial statements and the notes thereto, accompanies this Proxy Statement. Copies of our Annual Report on Form 10-K for fiscal 2013 and the exhibits thereto are available from the Company without charge upon written request of a stockholder. Copies of these materials are also available online through the Securities and Exchange Commission at [www.sec.gov](http://www.sec.gov). The Company may satisfy SEC rules regarding delivery of proxy materials, including the Proxy Statement, Annual Report and Notice, by delivering a single Notice and, if applicable, a single set of proxy materials to an address shared by two or more Company stockholders. This delivery method can result in meaningful cost savings for the Company. In order to take advantage of this opportunity, the Company may deliver only one Notice and, if applicable, a single set of proxy materials to multiple stockholders who share an address, unless contrary instructions are received prior to the mailing date. Similarly, if you share an address with another stockholder and have received multiple copies of our Notice and/or other proxy materials, you may write or call us at the address and phone number below to request delivery of a single copy of the Notice and, if applicable, other proxy materials in the future. We undertake to deliver promptly upon written or oral request a separate copy of the Notice and, if applicable, other proxy materials, as requested, to a stockholder at a shared address to which a single copy of the Notice and/or other proxy materials was delivered. If you hold stock as a record stockholder and prefer to receive separate copies of a Notice and, if applicable, other proxy materials either now or in the future, please contact the Company's Investor Relations department at 257 Simarano Drive, Suite 104, Marlborough, MA 01752 or by telephone at (508) 929-3646. If your stock is held through a brokerage firm or bank and you prefer to receive separate copies of a Notice and, if applicable, other proxy materials either now or in the future, please contact your brokerage firm or bank.

**EACH STOCKHOLDER IS URGED TO COMPLETE, DATE, SIGN AND PROMPTLY RETURN  
THE ENCLOSED PROXY.**

**RXi PHARMACEUTICALS CORPORATION**  
**EMPLOYEE STOCK PURCHASE PLAN**

**SECTION 1. PURPOSE OF PLAN**

The RXi Pharmaceuticals Corporation Employee Stock Purchase Plan (the "Plan") is intended to enable eligible employees of RXi Pharmaceuticals Corporation ("RXi") and such of its Subsidiaries as the Board of Directors of RXi (the "Board") may from time to time designate (RXi and such Subsidiaries being hereinafter referred to as the "Company") to use payroll deductions to purchase shares of common stock, \$0.0001 par value of RXi (such common stock being hereinafter referred to as "Stock"), and thereby acquire an interest in the future of RXi. For purposes of the Plan, a "Subsidiary" is any corporation that would be treated as a subsidiary of RXi under Section 424(f) of the Internal Revenue Code of 1986, as amended (the "Code"). The Plan is intended to qualify under Section 423 of the Code and will be construed accordingly.

**SECTION 2. RIGHT TO PURCHASE STOCK**

Subject to adjustment pursuant to Section 16 of this Plan, the maximum aggregate number of shares of Stock available for sale pursuant to the exercise of options ("Stock Rights") granted under the Plan to employees of the Company ("Employees") who meet the eligibility requirements set forth in Section 3 hereof ("Eligible Employees") is the lesser of (a) 1,500,000 shares increased on each anniversary of the adoption of the Plan by one percent (1%) of the total shares of Common Stock then outstanding and (b) 3,400,000 shares. The Stock to be delivered upon exercise of Stock Rights under the Plan may be either shares of authorized but unissued Stock or shares of reacquired Stock, as the Board may determine. If any Stock Right granted under the Plan shall expire or terminate for any reason without having been exercised in full or shall cease for any reason to be exercisable in whole or in part, the unpurchased Stock subject to such Stock Right shall again be available for sale pursuant to the exercise of Stock Rights under the Plan.

**SECTION 3. ELIGIBLE EMPLOYEES**

Subject to the exceptions and limitations set forth below, each Employee will be eligible to participate in the Plan on or after the first day of the month following his or her date of hire with respect to an Purchase Period beginning on or after such date.

(a) Any Employee who immediately after the grant of a Stock Right would own (or pursuant to Section 423(b)(3) of the Code would be deemed to own) stock possessing 5% or more of the total combined voting power or value of all classes of stock of the employer corporation or of its parent or subsidiary corporation, as defined in Section 424 of the Code, will not be eligible to receive a Stock Right to purchase Stock pursuant to the Plan.

(b) No Employee will be granted a Stock Right under the Plan that would permit his or her rights to purchase shares of stock under all employee stock purchase plans of the employer corporation and parent and subsidiary corporations to accrue at a rate that exceeds \$25,000 (or

such other maximum as may be prescribed from time to time under Section 423 of the Code or any successor provision) in fair market value of such stock (determined at the time the Stock Right is granted) for any calendar year during which any such Stock Right granted to such Employee is outstanding, as provided in Section 423 of the Code.

**SECTION 4. METHOD OF PARTICIPATION**

Unless otherwise determined by the Compensation Committee of the Board (the "Committee"), the "Purchase Periods" shall be the six-month periods commencing January 1 and ending June 30 and commencing July 1 and ending December 31 of each year. Except as provided in Section 11, each person who will be an

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Eligible Employee on the first day of any Purchase Period may elect to participate in the Plan by executing and delivering, by such deadline prior thereto as the Committee may specify (the "Enrollment Deadline"), a payroll deduction authorization in accordance with Section 5. Such Employee will thereby become a participant ("Participant") on the first day of such Purchase Period and will remain a Participant until his or her participation is terminated as provided in the Plan.

#### SECTION 5. PAYROLL DEDUCTION

Each payroll deduction authorization will request withholding at a percentage of Compensation per payroll period within a range specified by the Committee for the applicable Purchase Period. Withholding will be accomplished by means of payroll deductions from payroll periods ending in the Purchase Period. For purposes of the Plan, "Compensation" means wages, tips and other compensation reported on a Participant's Form W-2, plus compensation that is not currently includible in the Participant's gross income by reason of the application of Code Sections 125, 132(f)(4), 402(e)(3), 401(k), 402(h)(1)(B), 414(h), 403(b), or 457(b), and excluding reimbursements or other expense allowances, fringe benefits (cash or non-cash), moving expenses, deferred compensation (other than deferrals permitted by reason of one of the Code sections mentioned above), welfare benefits. Compensation shall include only that compensation that is actually paid to the Participant during the applicable Plan Year and while the employee is a Participant in the Plan. A Participant may not change his or her withholding rate once during a Purchase Period. However, a Participant may change his or her withholding rate for subsequent Purchase Periods by filing a new payroll deduction authorization with the Company on or before the Enrollment Deadline for the Purchase Period for which the change is to be effective. In addition, a Participant may cancel his or her participation in a Purchase Period as set forth in Section 11. All amounts withheld in accordance with a Participant's payroll deduction authorization will be credited to a withholding account maintained in the Participant's name on the books of the Company. Amounts credited to the withholding account will not be required to be set aside in trust or otherwise segregated from the Company's general assets.

#### SECTION 6. GRANT OF STOCK RIGHTS

Each person who is a Participant on the first day of a Purchase Period will be granted, as of such day and for such Purchase Period, a Stock Right entitling the Participant to acquire shares of Stock equal in number to the lesser of:

- (a) the whole number (disregarding any fractional share amount) determined by dividing \$12,500 by the fair market value of one share of Stock on the first day of the Purchase Period; and
- (b) the whole number (disregarding any fractional share amount) determined by dividing (i) the balance credited to the Participant's withholding account on the last day of the Purchase Period, by (ii) the purchase price per share of the Stock determined under Section 7.

The Committee will reduce, on a substantially proportionate basis, the number of shares of Stock purchasable by each Participant upon exercise of his or her Stock Right for a Purchase Period in the event that the number of shares then available under the Plan is insufficient. Stock Right grants under this Section 6 will be automatic and need not be separately documented.

#### SECTION 7. PURCHASE PRICE

The purchase price of Stock issued pursuant to the exercise of a Stock Right will be 90% of the fair market value of the Stock on (a) the date of grant of the Stock Right or (b) the date on which the Stock Right is deemed exercised, whichever is less. If the shares of Stock are traded on a national exchange or trading system (including the NASDAQ National Market System and the OTC Markets Group), the fair market value for any day will mean the reported closing price of the Stock for such day; *provided*, that if such day is not a trading day, fair market value will mean the reported closing price of the Stock for the next preceding day which is a trading day. If the shares of Stock are not traded on an exchange or trading system, the fair market value of such Stock on such date will be established in a manner determined in good faith by the Board.

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**SECTION 8. EXERCISE OF STOCK RIGHTS**

If any Employee is a Participant in the Plan on the last day of a Purchase Period, he or she will be deemed to have exercised the Stock Right granted to him or her for that Purchase Period. Upon such exercise, the Company will apply the balance of the Participant's withholding account to the purchase of the number of whole shares of Stock determined under Section 6 and as soon as practicable thereafter will evidence the transfer of shares of Stock or will deliver the shares of Stock to the Participant and will return to him or her the balance, if any, of his or her withholding account in excess of the total purchase price of the shares so issued; *provided*, that if the balance left in the account consists solely of an amount equal to the value of a fractional share it will be retained in the account and carried over to the next Purchase Period.

Notwithstanding anything herein to the contrary, the Company's obligation to issue and deliver shares of Stock under the Plan will be subject to the approval required of any governmental authority in connection with the authorization, issuance, sale or transfer of said shares, to any requirements of any national securities exchange applicable thereto, and to compliance by the Company with other applicable legal requirements in effect from time to time.

**SECTION 9. INTEREST**

No interest will be payable on withholding accounts.

**SECTION 10. TAXES**

Payroll deductions are made on an after-tax basis. If the Company determines that the exercise of a Stock Right or the disposition of shares following the exercise of a Stock Right could result in employment tax liability, the Company may, as a condition of exercise, make such provision as it deems necessary to provide for the remittance by the Participant of employment taxes required to be paid in connection with such exercise or disposition of shares.

**SECTION 11. CANCELLATION AND WITHDRAWAL**

A Participant who holds a Stock Right under the Plan may at any time prior to exercise thereof under Section 8 cancel all (but not less than all) of his or her Stock Right by written notice delivered to the Company. Upon such cancellation, the balance in the Participant's withholding account will be returned to the Participant.

A Participant may terminate his or her payroll deduction authorization as of any date by written notice delivered to the Company and will thereby cease to be a Participant as of such date. Any Participant who voluntarily terminates his or her payroll deduction authorization prior to the last day of a Purchase Period will be deemed to have canceled his or her Stock Right.

A Participant who makes a hardship withdrawal from a Company savings plan qualifying under Section 401(k) of the Code (a "401(k) Plan") will be deemed to have terminated his or her payroll deduction authorization as of the date of such hardship withdrawal, will cease to be a Participant as of such date, and will be deemed to have canceled his or her Stock Right. An Employee who has made a hardship withdrawal from a 401(k) Plan will not be permitted to participate in the Plan until the first Purchase Period that begins six months after the date of his or her hardship withdrawal.

**SECTION 12. RESTRICTIONS ON TRANSFER**

All shares of Stock purchased under the Plan will be subject to a restriction prohibiting the transfer of such shares of Stock from the account where such shares of Stock are initially held until such shares are sold through the Plan's administrator, custodian, or record keeper. For the avoidance of doubt, this restriction will remain in effect following the termination of a Participant's employment with the Company.

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### SECTION 13. TERMINATION OF EMPLOYMENT

Except as otherwise provided in Section 14, upon the termination of a Participant's employment with the Company for any reason, he or she will cease to be a Participant, any Stock Right held by him or her under the Plan will be deemed canceled, the balance of his or her withholding account will be returned, and he or she will have no further rights under the Plan.

### SECTION 14. DEATH OF PARTICIPANT

A Participant may elect that if death should occur during a Purchase Period the balance, if any, of the Participant's withholding account at the time of death will be applied at the end of the Purchase Period to the exercise of the Participant's Stock Right and the shares thereby purchased under the Stock Right (plus any balance remaining in the Participant's withholding account) will be delivered to the Participant's beneficiary or beneficiaries. Except as otherwise determined by the Committee (which may establish a procedure for the designation of beneficiaries under the Plan), a Participant's beneficiary(ies) for purposes of the Plan will be the Participant's estate.

### SECTION 15. EQUAL RIGHTS; PARTICIPANT'S RIGHTS NOT TRANSFERABLE

All Participants granted Stock Rights under the Plan with respect to any Purchase Period will have the same rights and privileges. Each Participant's rights and privileges under any Stock Right granted under the Plan will be exercisable during the Participant's lifetime only by him or her and except as provided in Section 14 above may not be sold, pledged, assigned, or transferred in any manner. In the event any Participant violates or attempts to violate the terms of this Section, any Stock Rights held by him or her may be terminated by the Company and, upon return to the Participant of the balance of his or her withholding account, all of the Participant's rights under the Plan will terminate.

### SECTION 16. EMPLOYMENT RIGHTS

Nothing contained in the provisions of the Plan will be construed as giving to any Employee the right to be retained in the employ of the Company or as interfering with the right of the Company to discharge any Employee at any time.

### SECTION 17. CHANGE IN CAPITALIZATION, MERGER

In the event of any change in the outstanding Stock of RXi by reason of a stock dividend, split-up, recapitalization, merger, consolidation, reorganization, or other capital change, the aggregate number and type of shares available under the Plan, the number and type of shares under Stock Rights granted but not exercised, the maximum number and type of shares purchasable under a Stock Right, and the Stock Right price will be appropriately adjusted.

In the event of a sale of all or substantially all of the Stock or a sale of all or substantially all of the assets of RXi, or a merger or similar transaction in which RXi is not the surviving corporation or which results in the acquisition of RXi by another person, the Board will (a) if RXi is merged with or acquired by another corporation, provide that each outstanding Stock Right will be assumed or a substitute Stock Right granted by the acquiror or successor corporation or a parent or subsidiary of the acquiror or successor corporation, (b) cancel each Stock Right and return the balances in Participants' withholding accounts to the Participants, or (c) pursuant to Section 19, end the Purchase Period on or before the date of the proposed sale or merger.

### SECTION 18. ADMINISTRATION OF PLAN

The Plan will be administered by the Committee, which will have the right to determine any questions which may arise regarding the interpretation and application of the provisions of the Plan and to make,

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administer, and interpret such rules and regulations as it will deem necessary or advisable. References in the Plan to the Committee will include the Committee's delegates to the extent of any delegation by the Committee to such delegates of administrative responsibilities hereunder.

The Committee may specify the manner in which employees are to provide notices and payroll deduction authorizations. Notwithstanding any requirement of "written notice" herein, the Committee may permit employees to provide notices and payroll deduction authorizations electronically.

**SECTION 19. AMENDMENT AND TERMINATION OF PLAN**

RXi reserves the right at any time or times to amend the Plan to any extent and in any manner it may deem advisable, by vote of the Board; *provided*, that any amendment that would be treated as the adoption of a new plan for purposes of Section 423 of the Code and the regulations thereunder will have no force or effect unless approved by the stockholders of RXi within twelve months before or after its adoption.

The Plan may be suspended or terminated at any time by the Board. In connection therewith, the Board may either cancel outstanding Stock Rights or continue them and provide that they will be exercisable either at the end of the applicable Purchase Period as determined under Section 4 above or on such earlier date as the Board may specify (in which case such earlier date will be treated as the last day of the applicable Purchase Period).

**SECTION 20. APPROVAL OF STOCKHOLDERS**

The Plan and the exercisability of Stock Rights granted hereunder will be subject to the approval of the stockholders of RXi obtained within twelve months before or after the date the Plan is adopted by the Board.

**RXi Pharmaceuticals Corporation**



**IMPORTANT ANNUAL MEETING INFORMATION**

000004

ENDORSEMENT\_LINE \_\_\_\_\_ SACKPACK \_\_\_\_\_



MR A SAMPLE  
DESIGNATION (IF ANY)

- ADD 1
- ADD 2
- ADD 3
- ADD 4
- ADD 5
- ADD 6



C123456789

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**Electronic Voting Instructions**

**Available 24 hours a day, 7 days a week!**

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

VALIDATION DETAILS ARE LOCATED BELOW IN THE TITLE BAR.

**Proxies submitted by the Internet or telephone must be received by 11:59 p.m., Eastern Time, on June 1, 2014.**



**Vote by Internet**

- Go to [www.envisionreports.com/RXII](http://www.envisionreports.com/RXII)
- Or scan the QR code with your smartphone

• Follow the steps outlined on the secured website

**Vote by telephone**

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

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



**Annual Meeting Proxy Card**

1234 5678 9012 345

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

**A Proposals — The Board of Directors recommends that you vote FOR the following:**

1. Election of Directors:	For	Withhold		For	Withhold		For	Withhold	
01 - Geert Cauwenbergh, Dr. Med. Sc.	<input type="checkbox"/>	<input type="checkbox"/>	02 - Robert J. Bitterman	<input type="checkbox"/>	<input type="checkbox"/>	03 - Keith L. Brownlie	<input type="checkbox"/>	<input type="checkbox"/>	<b>+</b>
04 - Curtis A. Lockshin, Ph.D.	<input type="checkbox"/>	<input type="checkbox"/>	05 - H. Paul Dorman	<input type="checkbox"/>	<input type="checkbox"/>				

*The Board of Directors recommends you vote FOR the Proposals 2, 3 and 4.*

	For	Against	Abstain
2. Ratification of BDO USA, LLP as independent registered public accounting firm for the fiscal year ending December 31, 2014.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Ratification of an amendment to our Certificate of Incorporation to reduce the authorized common stock.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Approval of the RXi Pharmaceuticals Corporation Employee Stock Purchase Plan.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**B Non-Voting Items**

**Change of Address** — Please print new address below.

**Comments** — Please print your comments below.

**Meeting Attendance**  
Mark box to the right if you plan to attend the Annual Meeting.



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

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**Proxy — RXi PHARMACEUTICALS CORPORATION**

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**Annual Meeting of Stockholders  
June 2, 2014 11:00 a.m.**

**This proxy is solicited by the Board of Directors**

The stockholder(s) hereby appoint(s) Geert Cauwenbergh and Caitlin Kontulis, or either of them, as proxies, each with the power to appoint his or her substitute, and hereby authorize(s) them to represent and to vote, as designated on the reverse side of this ballot, all of the shares of Common Stock of RXi Pharmaceuticals Corporation that the stockholder(s) is/are entitled to vote at the 2014 Annual Meeting of Stockholders to be held on June 2, 2014 at One Liberty Plaza, 165 Broadway, New York, New York 10006 11:00 a.m. local time, and at any adjournment or postponement thereof.

**This proxy, when properly executed, will be voted in the manner directed herein. If no such direction is made, this proxy will be voted in accordance with the Board of Directors' recommendations and in the discretion of the proxy holders on all other matters that may come before the meeting.**

**Continued and to be signed on reverse side**