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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 (Amendment No.)

Filed by the Registrant

Filed by a Party other than the Registrant

Check the appropriate box:

Preliminary Proxy Statement

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

Definitive Proxy Statement

Definitive Additional Materials

Soliciting Material under §240.14a-12

RA PHARMACEUTICALS, INC.

(Name of Registrant as Specified In Its Charter)

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

Payment of Filing Fee (Check the appropriate box):

No fee required.

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

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

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

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

(4) Proposed maximum aggregate value of transaction:

(5) Total fee paid:

Fee paid previously with preliminary materials.

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

(1) Amount Previously Paid:

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

(3) Filing Party:

(4) Date Filed:



April 28, 2017

Dear Ra Pharma Stockholder:

I am pleased to invite you to attend the 2017 Annual Meeting of Stockholders (the "**Annual Meeting**") of Ra Pharmaceuticals, Inc. ("**Ra Pharma**" or the "**Company**") to be held on Tuesday, June 20, 2017 at 10:00 a.m. Eastern Time at the offices of Goodwin Procter LLP, 100 Northern Avenue, Boston, MA 02210.

At this year's Annual Meeting, our stockholders will be asked to: (1) elect the two nominees for Class I director who are named in the Proxy Statement; (2) ratify the appointment of Deloitte & Touche LLP as our independent registered public accounting firm for the fiscal year ending December 31, 2017; and (3) transact any other business that properly comes before the Annual Meeting (including adjournments and postponements thereof). Our board of directors recommends that you vote "FOR" the election of each director nominee and "FOR" the ratification of the appointment of Deloitte & Touche LLP. You should carefully read our proxy materials, which contain detailed information concerning each of these proposals.

Under Securities and Exchange Commission rules, the Company is providing access to the proxy materials for the Annual Meeting to stockholders via the Internet. Accordingly, you can access the proxy materials and vote at www.proxyvote.com. Instructions for accessing the proxy materials and voting are described below and in the Notice of Annual Meeting that you received in the mail. The Notice also contains instructions on how to request a paper copy of our proxy materials and our 2016 Annual Report on Form 10-K. This process allows us to provide our stockholders with the information they need on a more timely basis, while reducing the environmental impact and lowering the costs of printing and distributing our proxy materials.

Your vote is very important. Whether or not you plan to attend the meeting, please carefully review the proxy materials and then cast your vote, regardless of the number of shares you hold. If you are a stockholder of record, you may vote over the Internet, by telephone, or, if you request to receive a printed set of the proxy materials, by completing, signing, dating and mailing the accompanying proxy card in the return envelope. Submitting your vote via the Internet or by telephone or proxy card will not affect your right to vote in person if you decide to attend the Annual Meeting. If your shares are held in street name (held for your account by a broker or other nominee), you will receive instructions from your broker or other nominee explaining how to vote your shares, and you will have the option to cast your vote by telephone or over the Internet if your voting instruction form from your broker or nominee includes instructions and a toll-free telephone number or Internet website to do so. In any event, to be sure that your vote will be received in time, please cast your vote by your choice of available means at your earliest convenience.

Thank you for your ongoing support of and continued interest in Ra Pharma.

Sincerely,

A handwritten signature in black ink, appearing to read "Douglas A. Treco".

Douglas A. Treco, Ph.D.
President and Chief Executive Officer



Ra Pharmaceuticals, Inc.
87 Cambridge Park Drive
Cambridge, MA 02140

NOTICE OF THE 2017 ANNUAL MEETING OF STOCKHOLDERS
To Be Held on June 20, 2017

Notice is hereby given that Ra Pharmaceuticals, Inc. will hold its 2017 Annual Meeting of Stockholders (the "**Annual Meeting**") on Tuesday, June 20, 2017 at 10:00 a.m. Eastern Time at the offices of Goodwin Procter LLP, 100 Northern Avenue, Boston, MA 02210, to accomplish the following purposes:

- elect two Class I directors, namely Douglas A. Treco, Ph.D. and Edward T. Mathers, to hold office until the 2020 annual meeting of stockholders and until their successors are duly elected and qualified, subject to their earlier resignation or removal;
- ratify the appointment of Deloitte & Touche LLP as our independent registered public accounting firm for the fiscal year ending December 31, 2017;
- transact any other business that properly comes before the Annual Meeting (including adjournments and postponements thereof).

The Annual Meeting will begin promptly at 10:00 a.m. Eastern Time, and check-in will begin at 9:30 a.m. Eastern Time. Only stockholders of record at the close of business on April 25, 2017 are entitled to notice of and to vote at the Annual Meeting as set forth in the Proxy Statement. If you plan to attend the Annual Meeting in person, you should be prepared to present photo identification such as a valid driver's license and verification of stock ownership for admittance. You are entitled to attend the Annual Meeting only if you were a stockholder as of the close of business on April 25, 2017 or hold a valid proxy for the Annual Meeting. If you are a stockholder of record, your ownership as of the record date will be verified prior to admittance into the meeting. If you are not a stockholder of record but hold shares through a broker, trustee, or nominee, you must provide proof of beneficial ownership as of the record date, such as an account statement or similar evidence of ownership. Please allow ample time for the admittance process.

We are pleased to take advantage of Securities and Exchange Commission rules that allow companies to furnish their proxy materials over the Internet. We are mailing to many of our stockholders a Notice of Internet Availability of Proxy Materials instead of a paper copy of our proxy materials and our 2016 Annual Report on Form 10-K. The Notice contains instructions on how to access those documents and to cast your vote via the Internet. The Notice also contains instructions on how to request a paper copy of our proxy materials and our 2016 Annual Report on Form 10-K. All stockholders who do not receive a Notice will receive a paper copy of the proxy materials and the Annual Report by mail. This process allows us to provide our stockholders with the information they need on a more timely basis, while reducing the environmental impact and lowering the costs of printing and distributing our proxy materials.

Your vote is important. Whether or not you plan to attend the Annual Meeting, I encourage you to read the Proxy Statement and submit your proxy or voting instructions as soon as possible. Please

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review the instructions on the proxy card regarding your voting options. You may vote in person at the Annual Meeting, via the Internet, by mail or by telephone.

By Order of the Board of Directors,



David C. Lubner
Executive Vice President and Chief Financial Officer

Cambridge, MA
April 28, 2017

Important Notice Regarding the Availability of Proxy Materials for the Ra Pharma 2017 Annual Meeting of Stockholders to Be Held on June 20, 2017: The Notice of 2017 Annual Meeting of Stockholders, proxy statement and our Annual Report on Form 10-K for the fiscal year ended December 31, 2016 are available at www.proxyvote.com. To obtain directions to the offices of Goodwin Procter LLP, 100 Northern Avenue, Boston, MA 02210 in order to attend the annual meeting in person, please visit the "Investors—News and Events" section of our website at www.rapharma.com or contact Investor Relations at jrobinson@rapharma.com.



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PROXY STATEMENT

**FOR THE 2017 ANNUAL MEETING OF STOCKHOLDERS
TO BE HELD JUNE 20, 2017**

GENERAL INFORMATION

Our board of directors has made this Proxy Statement and related materials available to you on the Internet, or at your request has delivered printed versions to you by mail, in connection with the board of directors' solicitation of proxies for our 2017 Annual Meeting of Stockholders (the "Annual Meeting"), and any adjournment of the Annual Meeting. If you requested printed versions of these materials by mail, they will also include a proxy card for the Annual Meeting.

The Annual Meeting will be held at 10:00 a.m. Eastern Time at the offices of Goodwin Procter LLP located at 100 Northern Avenue, Boston, MA 02210. We made this Proxy Statement available to stockholders beginning on April 28, 2017.

Pursuant to rules adopted by the Securities and Exchange Commission ("SEC"), we are providing access to our proxy materials over the Internet. Accordingly, we are sending a Notice of Internet Availability of Proxy Materials (the "Notice") to our stockholders of record and beneficial owners as of the record date identified below. The mailing of the Notice to our stockholders is scheduled to begin on or about May 9, 2017.

IMPORTANT NOTICE REGARDING THE INTERNET AVAILABILITY OF PROXY MATERIALS FOR THE ANNUAL STOCKHOLDERS MEETING TO BE HELD ON JUNE 20, 2017: This proxy statement, the accompanying proxy card or voting instruction card and our 2016 Annual Report on Form 10-K are available at www.proxyvote.com.

In this Proxy Statement the terms "Ra Pharma," the "Company," "we," "us," and "our" refer to Ra Pharmaceuticals, Inc. The mailing address of our principal executive offices is Ra Pharmaceuticals, Inc., 87 Cambridge Park Drive, Cambridge, MA 02140.

Record Date:	April 25, 2017
Quorum:	A majority of the shares of all issued and outstanding stock entitled to vote on the record date must be present in person or represented by proxy to constitute a quorum.
Shares Outstanding:	22,567,777 shares of common stock outstanding as of April 25, 2017.
Voting:	There are four ways a stockholder of record can vote: (1) By Internet: You may vote over the Internet by following the instructions provided in the Notice or, if you requested to receive your proxy materials by U.S. mail, by following the instructions on the proxy card.

- (2) By Telephone: If you requested to receive your proxy materials by U.S. mail, you may vote by telephone by following the instructions on the proxy card.
- (3) By Mail: If you requested to receive your proxy materials by U.S. mail, you may complete, sign and return the accompanying proxy card in the postage-paid envelope provided.
- (4) In Person: If you are a stockholder as of the record date, you may vote in person at the meeting. Submitting a proxy will not prevent stockholders from attending the Annual Meeting, revoking their earlier-submitted proxy, and voting in person.

In order to be counted, proxies submitted by telephone or Internet must be received by 11:59 p.m. Eastern Time on June 19, 2017. Proxies submitted by U.S. mail must be received before the start of the Annual Meeting.

If you hold your shares through a bank or broker, please follow their instructions.

Revoking Your Proxy

Stockholders of record may revoke their proxies by attending the Annual Meeting and voting in person, by filing an instrument in writing revoking the proxy or by filing another duly executed proxy bearing a later date with our Corporate Secretary before the vote is counted or by voting again using the telephone or Internet before the cutoff time (your latest telephone or Internet proxy is the one that will be counted). If you hold shares through a bank or broker, you may revoke any prior voting instructions by contacting that firm.

Votes Required to Adopt Proposals

Each share of our common stock outstanding on the record date is entitled to one vote on any proposal presented at the Annual Meeting:

For Proposal One, the election of directors, the two nominees receiving the plurality of votes entitled to vote and cast will be elected as directors.

For Proposal Two, a majority of the votes properly cast is required to ratify the appointment of Deloitte & Touche LLP as our independent registered public accounting firm for the fiscal year ending December 31, 2017.

Effect of Abstentions and Broker Non-Votes	<p>Votes withheld from any nominee, abstentions, and "broker nonvotes" (<i>i.e.</i>, where a broker has not received voting instructions from the beneficial owner and for which the broker does not have discretionary power to vote on a particular matter) are counted as present for purposes of determining the presence of a quorum. Shares voting "withheld" have no effect on the election of directors. Abstentions have no effect on the ratification of the appointment of Deloitte & Touche LLP as our independent registered public accounting firm for the fiscal year ending December 31, 2017.</p> <p>Under the rules that govern brokers holding shares for their customers, brokers who do not receive voting instructions from their customers have the discretion to vote uninstructed shares on routine matters, but do not have discretion to vote such uninstructed shares on non-routine matters. Only Proposal Two, the ratification of the appointment of Deloitte & Touche LLP, is considered a routine matter where brokers are permitted to vote shares held by them without instruction. If your shares are held through a broker, those shares will not be voted in Proposal One unless you affirmatively provide the broker instructions on how to vote.</p>
Voting Instructions	<p>If you complete and submit your proxy voting instructions, the persons named as proxies will follow your instructions. If you submit proxy voting instructions but do not direct how your shares should be voted on each item, the persons named as proxies will vote for the election of the nominees for director and for the ratification of the appointment of Deloitte & Touche LLP as our independent registered public accounting firm. The persons named as proxies will vote on any other matters properly presented at the Annual Meeting in accordance with their best judgment, although we have not received timely notice of any other matters that may be properly presented for voting at the Annual Meeting.</p>
Voting Results	<p>We will announce preliminary results at the Annual Meeting. We will report final results by filing a Form 8-K within four business days after the Annual Meeting. If final results are not available at that time, we will provide preliminary voting results in the Form 8-K and will provide the final results in an amendment to the Form 8-K as soon as they become available.</p>
Additional Solicitation/Costs	<p>We are paying for the distribution of the proxy materials and solicitation of the proxies. As part of this process, we reimburse brokerage houses and other custodians, nominees and fiduciaries for their reasonable out-of-pocket expenses for forwarding proxy and solicitation materials to our stockholders. Proxy solicitation expenses that we will pay include those for preparation, mailing, returning and tabulating the proxies. Our directors, officers, and employees may also solicit proxies on our behalf in person, by telephone, email or facsimile, but they do not receive additional compensation for providing those services.</p>

Emerging Growth Company

We are an "emerging growth company" as defined in the Jumpstart Our Business Startups Act of 2012 and, as such, have elected to comply with certain reduced public company reporting requirements. These reduced reporting requirements include reduced disclosure about our executive compensation arrangements and no non-binding advisory votes on executive compensation. We will remain an emerging growth company until the earlier of (1) the last day of the fiscal year (a) following the fifth anniversary of the completion of our initial public offering, (b) in which we have total annual gross revenue of at least \$1.07 billion, or (c) in which we are deemed to be a large accelerated filer, which means the market value of our common stock that is held by non-affiliates exceeds \$700 million as of the prior June 30th, and (2) the date on which we have issued more than \$1.0 billion in non-convertible debt during the prior three-year period.

Householding

Some banks, brokers, and other nominee record holders may be participating in the practice of "householding" proxy statements and annual reports. This means that only one copy of the Notice of Internet Availability of Proxy Materials, Proxy Statement, and Annual Report on Form 10-K for the year ended December 31, 2016, as applicable, is being delivered to multiple stockholders sharing an address unless we have received contrary instructions. We will promptly deliver a separate copy of any of these documents to you if you write to us at Ra Pharmaceuticals, Inc., 87 Cambridge Park Drive, Cambridge, MA 02140, Attn: Investor Relations, or call 617-401-4060.

If you want to receive separate copies of the Notice of Internet Availability of Proxy Materials, Proxy Statement, or Annual Report on Form 10-K in the future, or if you are receiving multiple copies and would like to receive only one copy for your household, you should contact your bank, broker, or other nominee record holder, or you may contact us at the above address or telephone number.

PROPOSAL ONE ELECTION OF DIRECTORS

Number of Directors; Board Structure

Our certificate of incorporation and bylaws provide that the number of our directors shall be fixed from time to time by a resolution of the majority of our board of directors. Immediately prior to the Annual Meeting our board of directors will consist of seven members. Our board of directors is divided into three staggered classes of directors as nearly equal in number as possible. One class is elected each year at the annual meeting of stockholders for a term of three years. The term of the Class I directors expires at the Annual Meeting. The term of the Class II directors expires at the 2018 annual meeting and the term of the Class III directors expires at the 2019 annual meeting. After the initial terms expire, directors are expected to be elected to hold office for a three-year term or until the election and qualification of their successors in office.

The following presents our current directors, their respective term on the board of directors, ages and positions as of April 25, 2017:

<u>Name</u>	<u>Age</u>	<u>Position</u>
<i>Directors whose terms will expire at the 2017 Annual Meeting</i>		
Douglas A. Treco, Ph.D.	59	President, Chief Executive Officer and Director
Edward T. Mathers(3)	57	Chairman of the Board and Director
<i>Directors whose terms will expire at the 2018 Annual Meeting</i>		
Robert Heft, Ph.D.(2)	62	Director
Jason Lettmann(2)	39	Director
Rajeev Shah(1)(3)	39	Director
<i>Directors whose terms will expire at the 2019 Annual Meeting</i>		
Timothy R. Pearson(1)(2)	49	Director
Peter Tuxen Bisgaard(1)(3)	43	Director

- (1) Member of the Audit Committee
- (2) Member of the Compensation Committee
- (3) Member of the Nominating and Corporate Governance Committee

Nominees

Based on the recommendation of the nominating and corporate governance committee of our board of directors, our board of directors has nominated Douglas A. Treco and Edward T. Mathers for election as directors to serve for a three-year term ending at the 2020 annual meeting or until their successors are elected and qualified. Each of the nominees is a current member of our board of directors and has consented to serve if elected.

Unless you direct otherwise through your proxy voting instructions, the persons named as proxies will vote all proxies received "for" the election of each nominee. If any nominee is unable or unwilling to serve at the time of the Annual Meeting, the persons named as proxies may vote for a substitute nominee chosen by the present board of directors. In the alternative, the proxies may vote only for the remaining nominees, leaving a vacancy on the board of directors. The board of directors may fill such vacancy at a later date or reduce the size of the board of directors. We have no reason to believe that any of the nominees will be unwilling or unable to serve if elected as a director.

Recommendation of the Board of Directors

THE BOARD RECOMMENDS THAT YOU VOTE "FOR" THE ELECTION OF EACH OF THE FOLLOWING NOMINEES.

The biographies of each of the nominees and continuing directors below contain information regarding each such person's service as a director, business experience, director positions held currently or at any time during the last five years and the experiences, qualifications, attributes or skills that caused the nominating and corporate governance committee to determine that the person should serve as a director of the Company. In addition to the information presented below regarding each such person's specific experience, qualifications, attributes and skills that led the board of directors and its nominating and corporate governance committee to the conclusion that he should serve as a director, we also believe that each of our directors has a reputation for integrity, honesty and adherence to high ethical standards. Each of our directors has demonstrated business acumen and an ability to exercise sound judgment, as well as a commitment of service to our company and our board of directors. Finally, we value our directors' experience in relevant areas of business management and on other boards of directors and board committees.

Our corporate governance guidelines also dictate that a majority of the board of directors be comprised of independent directors whom the board of directors has determined have no material relationship with the Company and who are otherwise "independent" directors under the published listing requirements of The NASDAQ Stock Market LLC ("NASDAQ"). The Company has determined that, with the exception of Dr. Douglas A. Treco, our president and chief executive officer, all of our other directors qualify as "independent" directors.

Nominees for Election for a Three-Year Term Ending at the 2020 Annual Meeting

Douglas A. Treco, Ph.D. has been our Chief Executive Officer since our inception in June 2008 and a director on our board of directors since our inception. Dr. Treco was an entrepreneur-in-residence with Morgenthaler Ventures between January 2008 and May 2014. In 1988, he co-founded Transkaryotic Therapies Inc., a multi-platform biopharmaceutical company that developed protein and gene therapy products, which was acquired in 2005 by Shire Pharmaceuticals Group plc. Dr. Treco was a visiting scientist in the Department of Molecular Biology at Massachusetts General Hospital and a lecturer in genetics at Harvard Medical School from 2004 to 2007. Dr. Treco received his Ph.D. in biochemistry and molecular biology from the State University of New York, Stony Brook, and performed postdoctoral studies at the Salk Institute for Biological Studies and Massachusetts General Hospital. We believe Dr. Treco is qualified to serve on our board of directors because of his extensive and broad range of experience in business and healthcare product development, including his experience co-founding and growing a company in the biopharmaceutical industry.

Edward T. Mathers has served as a member of our board of directors since 2010. Since August 2008, Mr. Mathers has been a partner at New Enterprise Associates, Inc., a private venture capital firm focusing on technology and healthcare investments. Mr. Mathers is a director of Liquidia Technologies Inc., Rhythm Pharmaceuticals Inc., Envisia Therapeutics Inc., Synlogic, Inc., Mima Therapeutics, Inc., Lumos Pharma, Inc., Ziareo, Inc., Amplyx Pharmaceuticals, Inc. and ObsEva SA. He is also a member of NC State's College of Sciences Foundation board. Mr. Mathers earned his B.S. in chemistry from North Carolina State University. We believe that Mr. Mathers is qualified to serve on our board of directors because of his extensive experience in the life sciences industry as a venture capitalist and senior executive, as well as his service on the boards of directors of numerous companies.

Directors Continuing in Office Until the 2018 Annual Meeting

Robert Heft, Ph.D. has served on our board of directors since March 2016. Dr. Heft currently serves as Chief Executive Officer of Zingenix Ltd., a company focused on gene therapy for severe

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orphan disorders. Prior to joining Zingenix in 2014, Dr. Heft was Chief Executive Officer and a member of the board of directors of Enobia Pharma Inc. from 2005 to 2012. Dr. Heft currently serves on the boards of Zingenix Ltd., VisionGate, Inc., Lumos Pharma Inc., and Clementia Pharmaceuticals, Inc., and as Chairman of the Board of ELOXX Pharmaceuticals, Ltd. He also serves on the Advisory Board of Sectoral Asset Management. Dr. Heft obtained his Ph.D. from the Massachusetts Institute of Technology in genetic engineering and radiological sciences, as well as a Master of Engineering Degree from Cornell University and a Bachelor of Engineering Degree from McGill University. We believe Dr. Heft is qualified to serve on our board of directors because of his extensive leadership experience in senior management roles for multiple companies in the biopharmaceutical industry and his experience serving on the board of directors for multiple industry-related companies.

Jason Lettmann has served as a member of our board of directors since 2015. Mr. Lettmann has been a partner of Morgenthaler Ventures since June 2009 and a partner of Lightstone Ventures since March 2012. Mr. Lettmann currently represents Morgenthaler and Lightstone on the boards of a number of their portfolio companies including Alexo Therapeutics Ltd., Carrick Therapeutics Ltd., FIRE1 Ltd., Promedior Inc., Relivant Medsystems Inc., Second Genome Inc., and Vapotherm Inc. Prior to joining Morgenthaler in 2009, Mr. Lettmann was a Vice President at Split Rock Partners where he focused on early-stage venture investments in medical devices and the life sciences. Mr. Lettmann has an M.B.A. from the University of Michigan's Ross School of Business and a B.A. from the University of Iowa. We believe Mr. Lettmann is qualified to serve on our board of directors because of his industry experience, his experience serving on the boards of directors for multiple industry-related companies, and his extensive experience with venture capital investments.

Rajeev Shah has served as a member of our board of directors since July 2015. Mr. Shah is a portfolio manager and managing director at RA Capital Management, LLC, an investment advisory firm that invests in health care companies, since 2002. Mr. Shah received a B.A. in Chemistry from Cornell University. We believe Mr. Shah is qualified to serve on our board of directors because of his leadership and financial experience at RA Capital, his experience in the biopharmaceutical industry, and his experience with venture capital investments.

Directors Continuing in Office Until the 2019 Annual Meeting

Timothy R. Pearson has served as a member of our board of directors since March 2016. Mr. Pearson currently serves as Chief Financial Officer of TESARO, Inc., an oncology-focused biopharmaceutical company, where he has served since May 2014. Prior to joining TESARO, Mr. Pearson served as Executive Vice President and Chief Financial Officer of Catalyst Health Solutions, Inc. from August 2011 to July 2012, where he led the finance and strategic planning functions. Prior to that, Mr. Pearson was Executive Vice President and Chief Financial Officer of MedImmune, the biologics division of AstraZeneca. Mr. Pearson holds a B.S. in Business Administration from the University of Delaware, an M.S. in Finance from Loyola College and a B.S. in Accounting from the University of Maryland University College. He is also a Certified Public Accountant. We believe Mr. Pearson is qualified to serve on our board of directors because of his extensive experience serving in senior level financial positions of numerous companies, his experience with biopharmaceutical companies, and his executive leadership experience.

Peter Tuxen Bisgaard has served as a member of our board of directors since 2015. Since 2009, Mr. Bisgaard has been employed as a Partner, and since 2016 as a Senior Partner, at Novo Ventures (US), Inc. Novo Ventures (US), Inc. provides consultancy services to Novo A/S, a Danish limited liability company that manages investments and financial assets. He is currently a member of the board of directors of a number of private companies, and a past member of the board of directors of a number of public companies, including Nevro Corp., Alder Biopharmaceuticals, Inc., Otonomy, Inc., and HTG Molecular Diagnostics, Inc. Mr. Bisgaard obtained his M.Sc. in 1998 from the Technical

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University of Denmark and was at the same time awarded a post graduate degree in mathematical modeling in economics by the European Consortium for Mathematics in the Industry. We believe Mr. Bisgaard is qualified to serve on our board of directors because of his financial expertise, extensive industry experience, his experience serving on the board of directors for several biopharmaceutical and medtech companies, and his experience with venture capital investments.

Executive Officers

The following presents our current executive officers and their respective ages and positions as of April 25, 2017:

<u>Name</u>	<u>Age</u>	<u>Position</u>
Douglas A. Treco, Ph.D.	59	Director, President and Chief Executive Officer
David C. Lubner	53	Executive Vice President and Chief Financial Officer
Simon Read, Ph.D.	46	Chief Scientific Officer
Ramin Farzaneh-Far, M.D.	40	Chief Medical Officer

See the section of this Proxy Statement captioned "—Nominees for Election for a Three-Year Term Ending at the 2020 Annual Meeting" for Dr. Treco's biography.

David C. Lubner has been our Executive Vice President and Chief Financial Officer since January 2016. Before joining our company, Mr. Lubner served as a member of the senior management team of Tetrphase Pharmaceuticals, Inc., a biotechnology company, from its inception in 2006 through 2015. From 2010 to 2015, Mr. Lubner served as Senior Vice President and the Chief Financial Officer of Tetrphase, where he led financial operations and was responsible for corporate finance activities. From 1999 to 2005, he served as the Chief Financial Officer of PharMetrics Inc., a pharmacy and medical claims data informatics company. Prior to joining PharMetrics, Mr. Lubner served as Vice President and Chief Financial Officer of ProScript, Inc. from 1996 to 1999. Mr. Lubner is a member of the American Institute of CPAs and a Certified Public Accountant in the Commonwealth of Massachusetts. Mr. Lubner received his B.S. in business administration from Northeastern University and M.S. in taxation from Bentley University.

Simon Read, Ph.D., has been our Chief Scientific Officer since April 2016. Prior to joining our company, Dr. Read served as a Vice President and Head of the Innovative Medicines Unit at Grunenthal GmbH, a pharmaceutical company headquartered in Aachen, Germany, from 2014 to March 2016. Prior to that, Dr. Read served as Vice President and Head of Global Biomedical Sciences at Grunenthal from 2011 to 2014. Before joining Grunenthal, Dr. Read was the Director, Experimental Medicine and Biomarkers, Immunology with Roche Products / Genentech Inc. from 2008 to 2011. Dr. Read has been a member of the Medical Research Council and Association of British Pharmaceutical Industry Steering Committee for the U.K.'s Immunology Consortium since 2012. Dr. Read has been a member of the Boston Children's Hospital Technology Development Fund steering group since 2016. Dr. Read received his B.Sc. in Physiology from University of Manchester, M.Sc. from University of Southampton and Ph.D. from University of Hertfordshire.

Ramin Farzaneh-Far, M.D., joined our company in July 2016 as our Chief Medical Officer. Before joining our company, from 2015 to 2016, he served as the Vice President of Medical Research at Akebia Therapeutics, Inc. From 2012 until he joined Akebia, Dr. Farzaneh-Far served as the Director of Clinical Research at Gilead Sciences, Inc., where he led the clinical development of multiple assets in the cardiovascular therapeutic area. Dr. Farzaneh-Far held various academic faculty positions at the University of California, San Francisco, or UCSF, and the University of Texas Southwestern Medical Center from 2009 to 2012. He completed his internal medicine residency at Brigham & Women's Hospital in Boston, and trained in cardiovascular medicine at UCSF. Dr. Farzaneh-Far received his B.A. and M.A. degrees in immunology from the University of Cambridge, his M.D. from University College London, and his MAS in Clinical Research from UCSF.

CORPORATE GOVERNANCE

Meetings of the Board of Directors

Our board of directors held nine regular meetings in 2016. During their respective terms of service, each director attended at least 75% of all meetings of the board of directors and the committees on which they then served, which were held during 2016. Under our corporate governance guidelines, directors are expected to be active and engaged in discharging their duties and to keep themselves informed about our business and operations. Directors are also expected to try to attend our annual meeting of stockholders, all meetings of the board of directors and all meetings of the committees on which they serve.

Code of Business Conduct and Ethics

We are committed to the highest standards of integrity and ethics in the way we conduct our business. In 2016, our board of directors adopted a Code of Business Conduct and Ethics, which applies to our directors, officers and employees, including our chief executive officer, our chief financial officer, and our other executive and senior officers. Our Code of Business Conduct and Ethics establishes our policies and expectations with respect to a wide range of business conduct, including the preparation and maintenance of our financial and accounting information, our compliance with laws, and possible conflicts of interest.

Under our Code of Business Conduct and Ethics, each of our directors and employees is required to report suspected or actual violations to the extent permitted by law. In addition, we have adopted separate procedures concerning the receipt and investigations of complaints relating to accounting or audit matters. These procedures have been adopted by the board of directors and are administered by our audit committee.

A current copy of our Code of Business Conduct and Ethics is posted on the Corporate Governance section of our website, which is located at www.rapharma.com.

Policy on Trading, Pledging and Hedging of Company Stock

Certain transactions in our securities (such as purchases and sales of publicly traded put and call options, and short sales) create a heightened compliance risk or could create the appearance of misalignment between management and stockholders. In addition, securities held in a margin account or pledged as collateral may be sold without consent if the owner fails to meet a margin call or defaults on the loan, thus creating the risk that a sale may occur at a time when an officer or director is aware of material, non-public information or otherwise is not permitted to trade in Company securities. Our insider trading policy expressly prohibits short sales and, without prior approval, derivative transactions of our stock by our executive officers, directors and specified other employees and their respective affiliates, purchases or sales of puts, calls or other derivative securities of the company or any derivative securities that provide the economic equivalent of ownership of any of our securities or an opportunity, direct or indirect, to profit from any change in the value of our securities, or other hedging transactions. In addition, our insider trading policy expressly prohibits our executive officers, directors and specified other employees and their respective affiliates from borrowing against company securities held in a margin account, or, without prior approval, pledging our securities as collateral for a loan.

Independence of the Board of Directors

Consistent with our corporate governance guidelines and NASDAQ rules, our board of directors has determined that, as of the date of this Proxy Statement, six out of the seven members of our board of directors are "independent," the non-independent member being Douglas A. Treco, Ph.D., our president and chief executive officer. In addition, all members of the audit, compensation and

nominating and corporate governance committees satisfy the applicable independence criteria of the SEC and NASDAQ.

Identifying and Evaluating Director Nominees

The board of directors is responsible for selecting its own members. The board of directors delegates the selection and nomination process to the nominating and corporate governance committee, with the expectation that other members of the board of directors, and management, will be requested to take part in the process as appropriate.

Generally, the nominating and corporate governance committee identifies candidates for director nominees in consultation with management, through the use of search firms or other advisors, through the recommendations submitted by stockholders or through such other methods as the nominating and corporate governance committee deems to be helpful to identify candidates. Once candidates have been identified, the nominating and corporate governance committee confirms that the candidates meet all of the minimum qualifications for director nominees established by the nominating and corporate governance committee. The nominating and corporate governance committee may gather information about the candidates in connection with its evaluation of a director candidate, including through candidate interviews, inquiry of the person or persons making the recommendation or nomination, engagement of an outside search firm, or reliance on the knowledge of the members of the nominating and corporate governance committee, the board of directors or management. The nominating and corporate governance committee then meets as a group to discuss and evaluate the qualities and skills of each candidate, both on an individual basis and taking into account the overall composition and needs of the board of directors. Based on the results of the evaluation process, the nominating and corporate governance committee recommends candidates for the board of directors' approval as director nominees for election to the board of directors.

Minimum Qualifications

The nominating and corporate governance committee will consider, among other things, the following qualifications, skills and attributes when recommending candidates for the board of directors' selection as nominees for the board of directors and as candidates for appointment to the board of directors' committees. The nominee shall have high standards of personal and professional ethics and integrity, shall have proven achievement and competence in the nominee's field and the ability to exercise sound business judgment, shall have skills that are complementary to those of the existing board of directors, shall have the ability to assist and support management and make significant contributions to the Company's success and shall have an understanding of the fiduciary responsibilities that is required of a member of the board of directors and the commitment of time and energy necessary to diligently carry out those responsibilities.

In evaluating proposed director candidates, the nominating and corporate governance committee will consider, in addition to the minimum qualifications and other criteria for board of directors membership approved by the board of directors from time to time, the current size and composition of the Board and the needs of the board of directors and the respective committees of the board of directors, such factors as character, integrity, judgment, diversity, independence, skills, education, expertise, business acumen, business experience, length of service, understanding of the Company's business and industry, other commitments and the like and any other factors that the nominating and corporate governance committee may consider appropriate.

Stockholder Recommendations

Stockholders may submit recommendations for director candidates to the nominating and corporate governance committee by sending the individual's name and qualifications to our Corporate

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Secretary at Ra Pharmaceuticals, Inc., 87 Cambridge Park Drive, Cambridge, MA 02140, who will forward all recommendations to the nominating and corporate governance committee. The nominating and corporate governance committee will evaluate any candidates recommended by stockholders against the same criteria and pursuant to the same policies and procedures applicable to the evaluation of candidates proposed by directors or management.

Stockholder Communications

The board of directors provides to every stockholder the ability to communicate with the board of directors, as a whole, and with individual directors on the board of directors through an established process for stockholder communication. For a stockholder communication directed to the board of directors as a whole, stockholders may send such communication to the attention of the Chair of the Board of Directors via U.S. Mail or Expedited Delivery Service to: Ra Pharmaceuticals, Inc., 87 Cambridge Park Drive, Cambridge, MA 02140, Attn: Chair of the Board of Directors.

For a stockholder communication directed to an individual director in his capacity as a member of the board of directors, stockholders may send such communication to the attention of the individual director via U.S. Mail or Expedited Delivery Service to: Ra Pharmaceuticals, Inc., 87 Cambridge Park Drive, Cambridge, MA 02140, Attn: [Name of Individual Director].

We will forward by U.S. Mail any such stockholder communication to each director, and the Chair of the Board in his capacity as a representative of the board of directors, to whom such stockholder communication is addressed to the address specified by each such director and the Chair of the Board, unless there are safety or security concerns that mitigate against further transmission.

Board Leadership Structure and Board's Role in Risk Oversight

Currently, the role of chairman of the board is separated from the role of chief executive officer, and we plan to keep these roles separated. We believe that separating these positions allows our chief executive officer to focus on our day-to-day business, while allowing the chairman of the board to lead the board of directors in its fundamental role of providing advice to and independent oversight of management. Our board of directors recognizes the time, effort and energy that the chief executive officer is required to devote to his position in the current business environment, as well as the commitment required to serve as our chairman, particularly as the board of directors' oversight responsibilities continue to grow. While our bylaws and corporate governance guidelines do not require that our chairman and chief executive officer positions be separate, our board of directors believes that having separate positions is the appropriate leadership structure for us at this time and demonstrates our commitment to good corporate governance.

Risk is inherent with every business, and how well a business manages risk can ultimately determine its success. We face a number of risks, including risks relating to our financial condition, development and commercialization activities, operations, strategic direction and intellectual property as more fully discussed under "Risk Factors" in our Annual Report on Form 10-K. Management is responsible for the day-to-day management of risks we face, while our board of directors, as a whole and through its committees, has responsibility for the oversight of risk management. In its risk oversight role, our board of directors has the responsibility to satisfy itself that the risk management processes designed and implemented by management are adequate and functioning as designed.

Our board of directors oversees the management of risks inherent in the operation of our business and the implementation of our business strategies. Our board of directors performs this oversight role by using several different levels of review. In connection with its reviews of the operations and corporate functions of our Company, our board of directors addresses the primary risks associated with those operations and corporate functions. In addition, our board of directors reviews the risks

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associated with our Company's business strategies periodically throughout the year as part of its consideration of undertaking any such business strategies.

Each of our board committees also oversees the management of our Company's risk that falls within the committee's areas of responsibility. In performing this function, each committee has full access to management, as well as the ability to engage advisors. Our chief financial officer provides reports to the audit committee and is responsible for identifying, evaluating and implementing risk management controls and methodologies to address any identified risks. In connection with its risk management role, our audit committee meets privately with representatives from our independent registered public accounting firm and our chief financial officer. The audit committee oversees the operation of our risk management program, including the identification of the primary risks associated with our business and periodic updates to such risks, and reports to our board of directors regarding these activities.

Risks Related to Compensation Policies and Practices

In establishing and reviewing our compensation philosophy and programs, we consider whether such programs encourage unnecessary or excessive risk taking. We believe that our executive compensation program does not encourage excessive or unnecessary risk taking. This is primarily due to the fact that our compensation programs are designed to encourage our executive officers and other employees to remain focused on both short-term and long-term strategic goals. As a result, we do not believe that our compensation programs are reasonably likely to have a material adverse effect on us.

Board Committees

Our board of directors has an audit committee, a compensation committee and a nominating and corporate governance committee, each of which has the composition and responsibilities described below. The audit committee, compensation committee and nominating and corporate governance committee all operate under charters approved by our board of directors (copies of which can be found on our website by visiting www.raphama.com and clicking through "News & Investors" and "Corporate Governance"). Our board of directors may from time to time establish other committees.

Audit Committee

Messrs. Pearson, Bisgaard and Shah serve on the audit committee, which is chaired by Mr. Pearson. Our board of directors has determined that Messrs. Pearson, Bisgaard and Shah are "independent" for audit committee purposes as that term is defined in the rules of the SEC and the applicable NASDAQ rules, and each has sufficient knowledge in financial and auditing matters to serve on the audit committee. Our board of directors has designated Mr. Pearson as an "audit committee financial expert," as defined under the applicable rules of the SEC. The audit committee held four meetings during 2016. The audit committee's responsibilities include:

- appointing, determining the compensation of, and assessing the independence of our independent registered public accounting firm;
- pre-approving auditing and permissible non-audit services, and the terms of such services, to be provided by our independent registered public accounting firm;
- reviewing the overall audit plan with our independent registered public accounting firm and members of management responsible for preparing our financial statements;
- reviewing and discussing with management and our independent registered public accounting firm our annual and quarterly financial statements and related disclosures as well as critical accounting policies and practices used by us;

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- coordinating the oversight and reviewing the adequacy of our internal control over financial reporting;
- establishing policies and procedures for the receipt and retention of accounting-related complaints and concerns;
- recommending based upon the audit committee's review and discussions with management and our independent registered public accounting firm whether our audited financial statements shall be included in our Annual Report on Form 10-K;
- monitoring the integrity of our financial statements and our compliance with legal and regulatory requirements as they relate to our financial statements and accounting matters;
- preparing the audit committee report required by SEC rules to be included in our annual proxy statement;
- reviewing all related person transactions for potential conflict of interest situations and approving all such transactions; and
- reviewing quarterly earnings releases.

Compensation Committee

Mr. Lettmann, Mr. Pearson and Dr. Heft serve on the compensation committee, which is chaired by Mr. Lettmann. Our board of directors has determined that each member of the compensation committee is "independent" as defined in the applicable NASDAQ rules. The compensation committee held one meeting during 2016. The compensation committee's responsibilities include:

- annually reviewing and approving the corporate goals and objectives relevant to the compensation of our Chief Executive Officer;
- evaluating the performance of our Chief Executive Officer in light of such corporate goals and objectives and based on such evaluation: (i) determining the cash compensation of our Chief Executive Officer and (ii) reviewing and approving grants and awards to our Chief Executive Officer under equity-based plans;
- reviewing and approving or recommending to the board of directors the cash compensation of our other executive officers;
- reviewing and establishing our overall management compensation, philosophy and policy;
- overseeing and administering our compensation and similar plans;
- evaluating and assessing potential and current compensation advisors in accordance with the independence standards identified in the applicable NASDAQ rules;
- reviewing and approving our policies and procedures for the grant of equity-based awards;
- reviewing and recommending to the board of directors the compensation of our directors;
- preparing the compensation committee report required by SEC rules, if and when required, to be included in our annual proxy statement; and
- reviewing and approving the retention, termination or compensation of any consulting firm or outside advisor to assist in the evaluation of compensation matters.

Nominating and Corporate Governance Committee

Messrs. Mathers, Bisgaard and Shah serve on the nominating and corporate governance committee, which is chaired by Mr. Mathers. Our board of directors has determined that each member of the nominating and corporate governance committee is "independent" as defined in the applicable NASDAQ rules. The nominating and corporate governance committee held one meeting during 2016. The nominating and corporate governance committee's responsibilities include:

- developing and recommending to the board of directors criteria for board and committee membership;
- establishing procedures for identifying and evaluating board of director candidates, including nominees recommended by stockholders;
- reviewing the composition of the board of directors to ensure that it is composed of members containing the appropriate skills and expertise to advise us;
- identifying individuals qualified to become members of the board of directors;
- recommending to the board of directors the persons to be nominated for election as directors and to each of the board's committees; and
- overseeing the evaluation of our board of directors and management.

Our board of directors may from time to time establish other committees.

Director Compensation

The following table provides information for the year ended December 31, 2016, regarding all compensation awarded to, earned by or paid to each person who served as a non-employee member of our board of directors during any portion of that year. Other than as set forth in the table and described more fully below, we did not pay any compensation, make any equity awards or non-equity awards to, or pay any other compensation to any of the non-employee members of our board of directors in 2016. Dr. Treco, who is also our president and chief executive officer, receives no compensation for his service as director, and the compensation received by Dr. Treco as an employee during 2016 is presented in the 2016 Summary Compensation Table below.

Name	Fees Earned or Paid in Cash \$(1)	Option Awards \$(2)	Total (\$)
Peter Tuxen Bisgaard(3)	—	—	—
Robert Heft, Ph.D.(4)	26,108	43,792	69,900
Jason Lettmann(5)	9,167	—	9,167
Edward T. Mathers(6)	13,063	—	13,063
Timothy R. Pearson(7)	30,233	43,792	74,025
Rajeev Shah(8)	8,479	—	8,479
Markus Goebel, M.D., Ph.D(9)	—	—	—

- (1) Includes amounts earned and paid pursuant to our non-employee director compensation policy, described below, which was implemented as of our initial public offering as well as amounts paid pursuant to our non-employee director compensation policy in place before our initial public offering. The amounts were prorated for the portion of the year preceding and following the initial public offering.
- (2) The amounts reported represent the aggregate grant-date fair value of stock options awarded to the directors in 2016, calculated in accordance with Financial Accounting Standards Board,

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Accounting Standards Codification Topic 718, or ASC Topic 718. Such grant-date fair value does not take into account any estimated forfeitures related to service-vesting conditions. For information regarding on assumptions underlying the valuation of equity awards, see the notes to our audited financial statements contained in our Annual Report on Form 10-K for the year ended December 2016, which are incorporated by reference herein. This amount does not correspond to the actual value that may be recognized by the named director upon vesting of the applicable awards.

- (3) Mr. Bisgaard joined our board of directors in July 2015. Mr. Bisgaard elected to waive his director compensation and did not receive any amounts earned during 2016. As of December 31, 2016, Mr. Bisgaard did not hold any outstanding equity awards.
- (4) Dr. Heft joined our board of directors in March 2016. As of December 31, 2016, Dr. Heft held an unexercised option to purchase 22,857 shares of common stock.
- (5) Mr. Lettmann joined our board of directors in January 2015. As of December 31, 2016, Mr. Lettmann did not hold any outstanding equity awards.
- (6) Mr. Mathers joined our board of directors in February 2010. As of December 31, 2016, Mr. Mathers did not hold any outstanding equity awards.
- (7) Mr. Pearson joined our board of directors in March 2016. As of December 31, 2016, Mr. Pearson held an unexercised option to purchase 22,857 shares of common stock.
- (8) Mr. Shah joined our board of directors in July 2015. As of December 31, 2016, Mr. Shah did not hold any outstanding equity awards.
- (9) Dr. Goebel joined our board of directors in 2010 and resigned in October 2016, in connection with the consummation of our initial public offering. As of December 31, 2016, Mr. Goebel did not hold any outstanding equity awards.

In connection with our initial public offering, our board of directors adopted a non-employee director compensation policy that is designed to provide a total compensation package that enables us to attract and retain, on a long-term basis, high caliber non-employee directors. Under the policy, all non-employee directors will be paid cash compensation as set forth below.

	<u>Annual Retainer</u>
Board of Directors:	
Non-Executive Chairman	\$ 60,000
Other Non-Employee Directors	\$ 35,000
Audit Committee:	
Committee Chairman	\$ 15,000
Other Committee Members	\$ 7,500
Compensation Committee:	
Committee Chairman	\$ 10,000
Other Committee Members	\$ 5,000
Nominating and Corporate Governance Committee:	
Committee Chairman	\$ 7,500
Other Committee Members	\$ 3,750

Each new non-employee director elected subsequent to our initial public offering will receive an initial, one-time equity award of 25,000 shares, which will vest in equal annual installments over three years, subject to continued service as a member of the board of directors. In addition, on the date of the annual meeting of stockholders, each continuing non-employee director who has served on the board of directors for the previous three months will be eligible to receive an annual equity award of 15,000 shares, which will vest in full upon the earlier to occur of the first anniversary of the date of grant or the date of the next annual meeting of stockholders. To the extent that any of the foregoing equity awards are in the form of stock options, such options will be granted at fair market value on the date of grant.

**PROPOSAL TWO RATIFICATION OF THE APPOINTMENT OF
OUR INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM**

We have appointed Deloitte & Touche LLP as our independent registered public accounting firm to perform the audit of our consolidated financial statements for the fiscal year ending December 31, 2017, and we are asking you and other stockholders to ratify this appointment. Deloitte & Touche LLP has audited our financial statements for the fiscal years 2016, 2015 and 2014.

The audit committee annually reviews the independent registered public accounting firm's independence, including reviewing all relationships between the independent registered public accounting firm and us and any disclosed relationships or services that may impact the objectivity and independence of the independent registered public accounting firm, and the independent registered public accounting firm's performance. As a matter of good corporate governance, the board of directors determined to submit to stockholders for ratification the appointment of Deloitte & Touche LLP. A majority of the votes properly cast is required in order to ratify the appointment of Deloitte & Touche LLP. In the event that a majority of the votes properly cast do not ratify this appointment of Deloitte & Touche LLP, we will review our future appointment of Deloitte & Touche LLP.

We expect that a representative of Deloitte & Touche LLP will attend the Annual Meeting and the representative will have an opportunity to make a statement if he or she so chooses. The representative will also be available to respond to appropriate questions from stockholders.

Policy on Audit Committee Pre-Approval of Audit and Permissible Non-Audit Services of Independent Registered Public Accounting Firm

In connection with our initial public offering, we adopted a policy under which the audit committee must pre-approve all audit and permissible non-audit services to be provided by the independent registered public accounting firm. These services may include audit services, audit-related services, tax services and other services.

In addition, in the event time constraints require pre-approval prior to the audit committee's next scheduled meeting, the audit committee has authorized its chairman to pre-approve services. Engagements so pre-approved are to be reported to the audit committee at its next scheduled meeting.

Audit Fees

The following table sets forth the fees billed by Deloitte & Touche LLP for audit, audit-related, tax and all other services rendered for 2016 and 2015:

<u>Fee Category</u>	<u>2016</u>	<u>2015</u>
Audit Fees	\$ 976,190	\$ 190,283
Audit-Related Fees	—	—
Tax Fees	22,160	29,455
All Other Fees	—	—
Total Fees	<u>\$ 998,350</u>	<u>\$ 219,738</u>

Audit Fees. Audit fees consist of fees billed for the audit of our annual consolidated financial statements, the review of the interim consolidated financial statements, and related services that are normally provided in connection with registration statements, including the registration statement for our initial public offering. Included in the 2016 audit fees is \$695,582 of fees billed in connection with our initial public offering in October 2016.

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Tax Fees. Consist of aggregate fees for tax compliance and tax advice, including the review and preparation of our various jurisdictions' income tax returns.

The audit committee pre-approved all services performed since the pre-approval policy was adopted.

Recommendation of the Board of Directors

THE BOARD RECOMMENDS THAT YOU VOTE "FOR" RATIFICATION OF THE APPOINTMENT OF DELOITTE & TOUCHE LLP AS OUR INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM FOR THE FISCAL YEAR ENDING DECEMBER 31, 2017.

Report of the Audit Committee of the Board of Directors

This report is submitted by the audit committee of the Board of Directors (the "Board") of Ra Pharmaceuticals, Inc. (the "Company"). The audit committee consists of the three directors whose names appear below. None of the members of the audit committee is an officer or employee of the Company, and the Board has determined that each member of the audit committee is "independent" for audit committee purposes as that term is defined under Rule 10A-3 of the Exchange Act, and the applicable rules of the NASDAQ Stock Market LLC ("NASDAQ"). Each member of the audit committee meets the requirements for financial literacy under the applicable rules and regulations of the SEC and NASDAQ. The Board has designated Mr. Pearson as an "audit committee financial expert," as defined under the applicable rules of the SEC. The audit committee operates under a written charter adopted by the Board.

The audit committee's general role is to assist the Board in monitoring our financial reporting process and related matters. Its specific responsibilities are set forth in its charter.

The audit committee has reviewed the Company's consolidated financial statements for 2016 and met with management, as well as with representatives of Deloitte & Touche LLP, the Company's independent registered public accounting firm, to discuss the consolidated financial statements. The audit committee also discussed with members of Deloitte & Touche LLP the matters required to be discussed by the Auditing Standard No. 1301, "Communication with Audit Committees," as adopted by the Public Company Accounting Oversight Board.

In addition, the audit committee received the written disclosures and the letter from Deloitte & Touche LLP required by applicable requirements of the Public Company Accounting Oversight Board regarding the independent accountant's communications with the audit committee concerning independence, and discussed with members of Deloitte & Touche LLP its independence.

Based on these discussions, the financial statement review and other matters it deemed relevant, the audit committee recommended to the Board that the Company's audited consolidated financial statements for 2016 be included in its Annual Report on Form 10-K for 2016.

The information contained in this audit committee report shall not be deemed to be "soliciting material," "filed" or incorporated by reference into any past or future filing under the Securities Exchange Act of 1934 or the Securities Act of 1933 unless and only to the extent that the Company specifically incorporates it by reference.

Audit Committee
Timothy R. Pearson (Chairman)
Peter Tuxen Bisgaard
Rajeev Shah

SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT

The following table sets forth certain information known to us regarding the beneficial ownership of our common stock as of April 15, 2017, for:

- each person known by us to be the beneficial owner of more than 5% of our common stock;
- our named executive officers;
- each of our directors and director nominees; and
- all executive officers and directors as a group.

Beneficial ownership is determined in accordance with the rules of the SEC and generally includes voting or investment power with respect to securities. Except as noted by footnote, and subject to community property laws where applicable, we believe, based on the information provided to us, that the persons and entities named in the table below have sole voting and investment power with respect to all shares of common stock shown as beneficially owned by them.

The table lists applicable percentage ownership based on 22,560,450 shares of common stock outstanding as of April 15, 2017. Options to purchase shares of our common stock that are exercisable within 60 days of April 15, 2017, are deemed to be beneficially owned by the persons holding these options for the purpose of computing percentage ownership of that person, but are not treated as outstanding for the purpose of computing any other person's ownership percentage.

Name and Address of Beneficial Owner(1)	Number of Shares Beneficially Owned	Percentage of Shares Beneficially Owned
5% Stockholders:		
Entities associated with New Enterprise Associates 13, L.P.(2)	3,490,073	15.5%
Morgenthaler Venture Partners IX, L.P.(3)	2,745,846	12.2%
Novartis Bioventures Ltd.(4)	2,461,037	10.9%
Novo A/S(5)	2,031,562	9.0%
Entities associated with Wellington Management Group LLP(8)	1,574,979	7.0%
Entities associated with RA Capital Management, LLC(7)	1,351,808	6.0%
Entities associated with Lightstone Ventures, L.P.(6)	1,320,655	5.9%
Named Executive Officers and Directors:		
Douglas A. Treco, Ph.D.(9)	388,703	1.7%
David C. Lubner(10)	78,539	*
Simon Read, Ph.D.(11)	49,006	*
Ramin Farzaneh-Far, M.D.(13)	—	*
Peter Tuxen Bisgaard (13)	—	*
Robert Heft, Ph.D.(12)	7,619	*
Jason Lettmann(14)	2,745,846	12.2%
Edward T. Mathers(13)(15)	—	*
Timothy R. Pearson(12)	7,619	*
Rajeev Shah(13)	—	*
All executive officers and directors as a group (10 persons)(16)	3,277,332	14.5%

* Represents beneficial ownership of less than one percent.

(1) Unless otherwise indicated, the address for each beneficial owner is c/o Ra Pharmaceuticals, Inc., 87 Cambridge Park Drive, Cambridge, MA 02140.

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- (2) The information reported is based on a Schedule 13D filed with the SEC on November 4, 2016. The shares directly held by New Enterprise Associates 13, L.P., or NEA 13, are indirectly held by NEA Partners 13, L.P., or NEA Partners 13, the sole general partner of NEA 13. NEA 13 GP, LTD, or NEA 13 LTD, is the sole general partner of NEA Partners 13. The individual Directors, or the Directors, of NEA 13 LTD are M. James Barrett, Peter J. Barris, Forest Baskett, Patrick J. Kerins, Krishna Kolluri, David M. Mott, Scott D. Sandell, Ravi Viswanathan and Harry R. Weller. The Directors share voting and dispositive power with regard to shares held directly by NEA 13. The address of NEA 13 is New Enterprise Associates, 1954 Greenspring Drive, Suite 600, Timonium, MD 21093.
- (3) The information reported is based on a Schedule 13D filed with the SEC on November 4, 2016. The Morgenthaler Management Partners IX, LLC, or MMP IX, the general partner of Morgenthaler Venture Partners IX, L.P., may be deemed to have sole power to vote and to dispose of the shares, and Robert C. Bellas, Jr., Ralph E. Christoffersen, Jason Lettmann, Gary R. Little, Rebecca Lynn, Gary J. Morgenthaler, Robert D. Pavey and Henry Plain, the members of MMP IX, may be deemed to have shared power to vote and to dispose of the shares. Each of these individuals disclaims beneficial ownership of such shares except to the extent of such individual's pecuniary interest therein. The address of Morgenthaler Venture Partners IX, L.P. is 3200 Alpine Road Portola Valley, CA 94028.
- (4) The information reported is based on information provided by Novartis Bioventures Ltd. as of April 25, 2017. The shares directly held by Novartis Bioventures Ltd. are indirectly held by Novartis AG, the indirect parent of Novartis Bioventures Ltd. Novartis Bioventures Ltd. and Novartis AG share voting and dispositive power with regard to shares held directly by Novartis Bioventures Ltd. The address for Novartis Bioventures Ltd. is 131 Front Street, Hamilton, Bermuda HM12.
- (5) The information reported is based on a Schedule 13D filed with the SEC on November 2, 2016. Novo A/S, a limited liability company wholly owned by the Novo Nordisk Foundation, through its board of directors, has the sole power to vote and dispose of the shares. The board of directors of Novo A/S, currently comprised of Sten Scheibye, Göran Ando, Jeppe Christiansen, Steen Riisgaard and Per Wold-Olsen may exercise voting and dispositive control over the shares only with the support of a majority of the board of directors. No individual member of the board of directors is deemed to hold any beneficial ownership or reportable pecuniary interest in the shares held by Novo A/S. Peter Tuxen Bisgaard, one of our directors, is employed as a partner of Novo Ventures (US), Inc., a consultant to Novo A/S, and is not deemed to beneficially own or have a reportable pecuniary interest in the shares held by Novo A/S. The address for Novo A/S is Tuborg Havnevej 19, 2900 Hellerup, Denmark.
- (6) The information reported is based on a Schedule 13G filed with the SEC on February 14, 2017. Consists of 1,162,310 shares held by Lightstone Ventures, L.P. and 158,345 shares held directly by Lightstone Ventures(A), L.P. LSV Associates, LLC, or LSV GP, is the general partner of Lightstone Ventures, L.P. and Lightstone Ventures(A), L.P.(collectively, "LSV") and may be deemed to have indirect beneficial ownership of the shares held by LSV. Michael A. Carusi, Jean M. George, and Henry A. Plain, Jr. are the managing directors of LSV GP(collectively, the "LSV Directors") possess the power to direct the voting and disposition of the shares owned by LSV and may be deemed to have indirect beneficial ownership of the shares held by LSV. The address for the entities is 500 Boylston Street, Suite 1380, Boston, MA 02116.
- (7) The information reported is based on a Schedule 13D filed with the SEC on November 9, 2016. Consists of 1,111,950 shares held by RA Capital Healthcare Fund, L.P. and 239,858 shares held in a separately managed account (the "Account"). Peter Kolchinsky, as member of RA Capital Management, LLC, which is the general partner of RA Capital Healthcare Fund, L.P. and the

investment advisor of the Account, has voting and investment power over the shares held by RA Capital Healthcare Fund, L.P. and the Account. RA Capital Management, LLC and Mr. Kolchinsky may be deemed to have shared voting and dispositive power over the shares directly owned by RA Capital Healthcare Fund, L.P. and the Account. Mr. Kolchinsky disclaims beneficial ownership over all shares held by RA Capital Healthcare Fund, LP and the Account, except to the extent of any pecuniary interest in such shares. The notice address for RA Capital Healthcare Fund, L.P. is 20 Park Plaza, Suite 1200, Boston, MA 02116. The notice address for the Account is 280 S. Mangum Street, Suite 210, Durham, NC 27701.

- (8) The information reported is based on a Schedule 13G filed with the SEC on February 14, 2017. Wellington Group Holdings LLP, Wellington Investment Advisors Holdings LLP and Wellington Management Group LLP each report shared voting power over 1,403,676 shares and shared dispositive power over 1,574,979 shares of common stock. Wellington Management Company LLP reports shared voting power over 1,388,670 shares and shared dispositive power over 1,473,341 shares of common stock. Such Schedule 13G indicates that these shares are owned of record by clients of certain investment advisors owned, directly or indirectly, by Wellington Management Group LLP. Wellington Investment Advisors Holdings LLP controls directly, or indirectly through Wellington Management Global Holdings, Ltd., the Wellington Investment Advisers. Wellington Investment Advisors Holdings LLP is owned by Wellington Group Holdings LLP. Wellington Group Holdings LLP is owned by Wellington Management Group LLP. The address of Wellington Management Group LLP and Wellington Trust Company, NA is 280 Congress Street, Boston, Massachusetts 02210.
- (9) Includes options to purchase 184,411 shares of common stock that may be exercised within 60 days of April 15, 2017.
- (10) Includes options to purchase 78,539 shares of common stock that may be exercised within 60 days of April 15, 2017.
- (11) Includes options to purchase 49,006 shares of common stock that may be exercised within 60 days of April 15, 2017.
- (12) Includes options to purchase 7,619 shares of common stock that may be exercised within 60 days of April 15, 2017.
- (13) Includes options to purchase 0 shares of common stock that may be exercised within 60 days of April 15, 2017.
- (14) The information reported is based on a Schedule 13D filed with the SEC on November 4, 2016. The Morgenthaler Management Partners IX, LLC, or MMP IX, the general partner of Morgenthaler Venture Partners IX, L.P., may be deemed to have sole power to vote and to dispose of the shares, and Robert C. Bellas, Jr., Ralph E. Christoffersen, Jason Lettmann, Gary R. Little, Rebecca Lynn, Gary J. Morgenthaler, Robert D. Pavey and Henry Plain, the members of MMP IX, may be deemed to have shared power to vote and to dispose of the shares. Each of these individuals disclaims beneficial ownership of such shares except to the extent of such individual's pecuniary interest therein. Mr. Lettmann is a partner of Lightstone Ventures, L.P. Mr. Lettmann does not have voting or dispositive power over any of the shares held directly or indirectly by Lightstone Ventures, L.P. referenced in footnote (6) above.
- (15) Mr. Mathers is a partner of New Enterprise Associates, Inc. Mr. Mathers does not have voting or dispositive power over any of the shares directly held by NEA 13 or NEA Ventures 2009 referenced in footnote (2) above. Mr. Mathers's business address is 5425 Wisconsin Ave, Suite 800, Chevy Chase, MD 20815.

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(16) Includes 327,194 shares of common stock subject to options exercisable within 60 days of April 15, 2017.

Section 16(a) Beneficial Ownership Reporting Compliance

Section 16(a) of the Exchange Act requires our directors and executive officers and persons who own more than 10% of our common stock, to file with the SEC initial reports of beneficial ownership and reports of changes in beneficial ownership. Officers, directors and greater than 10% stockholders are required by SEC regulations to furnish us with copies of all such reports.

To our knowledge, based solely on a review of the copies of such reports furnished to us and written representations that no other reports were required, we believe that for 2016, all required reports were filed on a timely basis under Section 16(a).

Equity Compensation Plan Information

The following table sets forth information as of December 31, 2016 regarding shares of common stock that may be issued under our equity compensation plans, consisting of our 2010 Stock Incentive Plan, or the 2010 Plan, our 2016 Stock Award and Incentive Plan, or the 2016 Plan, and our 2016 Employee Stock Purchase Plan. As of the closing of our initial public offering, no additional equity awards are made under our 2010 Plan. We do not have any non-stockholder approved equity compensation plans.

<u>Plan Category</u>	<u>Number of Shares of Common Stock to be Issued Upon Exercise of Outstanding Options (a)</u>	<u>Weighted-Average Exercise Price of Outstanding Options (b)</u>	<u>Number of Shares of Common Stock Remaining Available for Future Issuance Under Equity Compensation Plans (Excluding Securities Reflected in Column (a)) (c)</u>
Equity compensation plans approved by stockholders	2,168,350	\$ 4.27	1,503,253

EXECUTIVE COMPENSATION

Compensation Overview

The compensation discussion, which should be read together with the compensation tables set forth below, provides information regarding our executive compensation program for our named executive officers for 2016, who are Dr. Douglas A. Treco, our president and chief executive officer, David C. Lubner, our executive vice president and chief financial officer, Dr. Ramin Farzaneh-Far, our chief medical officer, and Dr. Simon Read, our chief scientific officer. We refer to these four executive officers as our named executive officers.

Setting Executive Compensation

Our compensation committee is responsible for reviewing and making recommendations to our board of directors regarding the compensation to be paid to our chief executive officer, and for reviewing and determining the compensation of our other executive officers.

We have not adopted any formal guidelines for allocating total compensation between long-term and short-term compensation, cash compensation and non-cash compensation, or among different forms of non-cash compensation.

Role of the Compensation Committee

The compensation committee, which is comprised entirely of independent directors, reviews the compensation packages for our named executive officers, including an analysis of all elements of compensation separately and in the aggregate. Our compensation committee operates under a written charter adopted by our board of directors, which provides that the compensation committee has overall responsibility for:

- periodically reviewing and assessing our processes and procedures for the consideration and determination of executive compensation;
- reviewing and approving grants and awards under incentive-based compensation plans and equity-based plans; and
- reviewing, and recommending to the board of directors, the compensation of our chief executive officer and reviewing and approving the compensation of our other executive officers.

In reviewing and approving these matters, our compensation committee considers such matters as it deems appropriate, including our financial and operating performance, the alignment of the interests of our executive officers and our stockholders and our ability to attract and retain qualified and committed individuals, as well as the executive's performance, experience, responsibilities and the compensation of executive officers in similar positions at comparable companies.

Role of Management

Our Chief Executive Officer assists the compensation committee in identifying the key performance and incentive measures that may be used in setting annual cash performance bonus opportunities and also provide input on key contributors and performers within the Company so as to ensure their compensation accurately reflects their responsibilities, performance, experience levels and expected future contributions. Although our Chief Executive Officer does not participate in decisions involving his own compensation, his recommendations and input, along with input from other executive officers, are often taken into consideration by the compensation committee when making compensation decisions.

Role of Compensation Consultant

Our compensation committee has engaged Haigh & Company, an independent executive compensation consultant, to provide guidance with respect to the development and implementation of our compensation programs.

Our compensation committee requires that its compensation consultants be independent of Company management. During 2016, Haigh & Company did not provide services to us other than the services to our compensation committee described in this proxy statement. Our compensation committee performs an annual assessment of the compensation consultants' independence to determine whether the consultants are independent. Our compensation committee has determined that Haigh & Company is independent and that their work has not raised any conflict of interests.

In 2016, Haigh & Company assisted the compensation committee as follows:

- preparing competitive compensation analyses for the Company employees, including our named executive officers and providing consulting support for 2016 executive compensation actions;
- preparing compensation competitive analyses for our board of directors and provided consulting support for the establishment of our director compensation policy adopted at IPO; and
- providing consulting support and advice related to the adoption of other post-IPO compensation policies and practices.

Elements of Compensation

Base salary

Our compensation committee or the board of directors reviews the base salaries of our executive officers, including our named executive officers, from time to time and makes adjustments as it determines to be reasonable and necessary to reflect the scope of an executive officer's performance, contributions, responsibilities, experience, prior salary level, position (in the case of a promotion) and market conditions.

Annual performance bonuses

We also believe that a significant portion of our executives' cash compensation should be based on the attainment of business goals established by our board of directors or the compensation committee. Each of our named executive officers participated in our 2016 Senior Executive Cash Incentive Bonus Plan ("2016 Bonus Plan"). The 2016 Bonus Plan provides for formula-based incentive payments based upon the achievement of certain corporate and individual performance goals and objectives approved by our board of directors and compensation committee, respectively. We typically establish bonus targets for our named executive officers and conduct an annual performance review process to serve as the basis for determining eligibility for any such bonuses. Among the key parameters that typically are the basis for such bonus determinations are our achievement of overall corporate goals and the achievement of specified goals and objectives by each individual employee. Bonuses are based on the executive officer's base salary during the year, and are expected to be paid out in the first quarter of the following year. For 2016, the bonus targets as a percent of salary were 40% for Dr. Treco and 30% for Mr. Lubner, Dr. Farzaneh-Far and Dr. Read.

All final bonus payments to our named executive officers, if any, are determined by our compensation committee, which retains full discretion to adjust individual actual bonus awards based on the achievement of corporate and individual performance objectives, and may also adjust bonus awards based on other factors in their discretion.

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For 2016, the corporate performance objectives generally fell into the categories of the advancement of our research and development programs focused on developing novel therapeutics to treat complement-mediated diseases, including advancing our lead product candidate RA101495, for the treatment of paroxysmal nocturnal hemoglobinuria or PNH, the advancement of our other earlier stage complement-mediated discovery programs, the advancement of our collaboration with Merck as well as our other partnering initiatives, and the financing of our Company via an Initial Public Offering of shares of our common stock. In evaluating management's performance in 2016 against the 2016 goals and objectives, our compensation committee assigned an achievement level that was then used to determine each named executive officer's bonus. For 2016, we awarded bonuses to Dr. Treco, Mr. Lubner, Dr. Read and Dr. Farzaneh-Far in the amounts of \$188,000, \$156,000, \$60,000 and \$60,000, respectively. Drs. Read and Farzaneh-Far's bonuses were prorated based on the date they commenced employment with us in 2016.

Equity-based compensation

Equity-based compensation is an integral part of our overall compensation program. Providing named executive officers with the opportunity to create significant wealth through stock ownership is a powerful tool to attract and retain highly qualified executives, achieve strong long-term stock price performance, align our executives' interests with those of our stockholders and provide a means to build real ownership in the Company. In addition, the vesting feature of our equity grants contributes to executive retention. We have historically granted equity awards to our employees, including our named executive officers, in the form of options to purchase shares of our common stock or restricted stock awards.

401(k) Plan

We maintain a 401(k) retirement plan that is intended to be a tax-qualified defined contribution plan under Section 401(k) of the Internal Revenue Code. All participants' interests in their contributions are 100% vested when contributed. Pre-tax contributions are allocated to each participant's individual account and are then invested in selected investment alternatives according to the participants' directions. In general, all of our U.S.-based employees are eligible to participate in the 401(k) plan, beginning on the first day after commencement of their employment. The 401(k) plan includes a salary deferral arrangement pursuant to which participants may elect to reduce their current compensation by up to the statutorily prescribed limit, equal to \$18,000 (an additional \$6,000 in contributions is allowed for participants age 50 and over) in 2016, and have the amount of the reduction contributed to the 401(k) plan. We also match employee contributions to the 401(k) plan up to the lesser of 50% of the first 4% of an employee's cash compensation during each pay period and \$2,000. Effective January 1, 2017, we match employee contributions up to a maximum of 50% of the first 6% of an employee's cash compensation during each pay period, subject to statutory limits.

Summary Compensation Table

The following table provides information regarding the total compensation for services rendered in all capacities that was earned during the fiscal years ended December 31, 2016 and December 31, 2015 by our named executive officers.

Name and Principal Position	Fiscal Year	Salary (\$)	Bonus (\$)	Option Awards (\$)(4)	Non-Equity Incentive Plan Compensation (\$)(5)	All Other Compensation (\$)	Total (\$)
Douglas A. Treco, Ph.D. <i>President & Chief Executive Officer</i>	2016	400,000	—	664,766	188,000	2,432(8)	1,255,198
	2015	360,000	—	722,765	68,000(7)	2,432(8)	1,153,197
David C. Lubner(1) <i>Executive Vice President & Chief Financial Officer</i>	2016	342,046	—	510,311	156,000	2,396(8)	1,010,753
	2015	—	—	—	—	—	—
Simon Read, Ph.D.(2) <i>Chief Scientific Officer</i>	2016	231,326	—	503,939	60,000	46,481(9)	841,746
	2015	—	—	—	—	—	—
Ramin Farzaneh-Far, M.D.(3) <i>Chief Medical Officer</i>	2016	167,046	180,000(6)	774,351	60,000	162	1,181,559
	2015	—	—	—	—	—	—

- (1) Mr. Lubner joined Ra Pharma on January 11, 2016. His annualized base salary for 2016 was \$350,000.
- (2) Dr. Read joined Ra Pharma on April 4, 2016. His annualized base salary for 2016 was \$310,000.
- (3) Dr. Farzaneh-Far joined Ra Pharma on July 11, 2016. His annualized base salary for 2016 was \$350,000.
- (4) Amounts reflect the grant date fair value of option awards granted in 2016 and 2015, calculated in accordance with ASC Topic 718. Such grant date fair value does not take into account any estimated forfeitures related to service-vesting conditions. For information regarding assumptions underlying the valuation of equity awards, see the notes to our audited financial statements contained in our Annual Report on Form 10-K for the year ended December 2016, which are incorporated by reference herein. These amounts do not correspond to the actual value that may be recognized by the named executive officers upon vesting of the applicable awards.
- (5) The 2016 amounts reported represent incentive bonuses paid in early 2017. The incentive bonuses awarded with respect to fiscal year 2016 were paid pursuant to our 2016 Bonus Plan and amounts were determined based upon the achievement of company performance objectives related to product development, partnerships and operations for the year ended December 31, 2016.
- (6) The amount reported represents a sign-on bonus paid to Dr. Farzaneh-Far. In the event Dr. Farzaneh-Far terminates his employment with us for any reason or we terminate his employment for Cause, in either case within two years of his start date, he is required to repay the entire sign-on bonus within 30 days of his last day of employment with Ra Pharma.
- (7) Amount reflects a performance bonus paid to Dr. Treco in 2015 with respect to achievement of corporate performance goals for 2015.
- (8) Amount reflects 401(k) matching contribution and long-term disability insurance premiums.
- (9) Amount reflects long-term disability insurance premiums and \$46,193 relocation expenses paid in 2016 to Dr. Reed.

Employment Arrangements with Our Named Executive Officers

We have entered into employment agreements with each of our named executive officers, which became effective upon the closing of our initial public offering. Except as noted below, these employment agreements provide for "at will" employment.

Dr. Douglas Treco

Effective upon closing of our initial public offering in October 2016, Dr. Treco entered into a new employment agreement with us. Pursuant to the employment agreement, Dr. Treco's annual base salary was initially set at \$400,000 and he was eligible to earn an annual cash incentive bonus with a target rate equal to 40% of his base salary. The base salary is subject to annual review and adjustment. As of January 1, 2017, his annual base salary and the target rate of his annual cash incentive bonus increased to \$440,000 and 45%, respectively. Dr. Treco is also eligible to participate in the employee benefit plans available to our employees, subject to the terms of those plans.

Dr. Treco's employment agreement provides that, in the event that his employment is terminated by us without "cause" or he resigns for "good reason" (both as defined in the employment agreement) subject to the execution and effectiveness of a separation agreement, including a general release of claims in our favor, he will be entitled to: (i) an amount equal to his annual base salary plus the annual incentive compensation Dr. Treco was paid for the most recently completed fiscal year, payable in substantially equal installments over twelve months; (ii) if Dr. Treco is participating in our group health plan immediately prior to his termination, a monthly cash payment equal to the monthly contribution we would have made to fund Dr. Treco's health insurance had he remained employed with us, payable for the earlier of 12 months or the end of Dr. Treco's COBRA health continuation period; and (iii) the acceleration of all time-based equity awards that would have vested if Dr. Treco had remained employed for an additional 12 months.

If Dr. Treco's employment is terminated by us without cause or he resigns for good reason, in either case within 12 months following a "change in control" (as defined in the employment agreement), subject to the execution and effectiveness of a separation agreement, including a general release of claims in our favor, he will be entitled to the following, in lieu of the payments and benefits described in the preceding paragraph: (i) a lump sum cash payment equal to 1.5 times the sum of his then-current base salary (or his base salary in effect immediately prior to the change in control, if higher) and his target annual incentive compensation, (ii) if Dr. Treco is participating in our group health plan immediately prior to his termination, a monthly cash payment equal to the monthly contribution we would have made to fund Dr. Treco's health insurance had he remained employed with us, payable for the earlier of 18 months or the end of Dr. Treco's COBRA health continuation period; and (iii) the acceleration of all time-based equity awards held by Dr. Treco.

In addition, Dr. Treco has entered into an employee confidentiality and assignment agreement agreeing to, among other things: (1) not compete with us during his employment and for a period of 12 months year after the termination of such employment, (2) not solicit our employees during his employment and for a period of 12 months after the termination of such employment, (3) protect our confidential and proprietary information and (4) assign to us related intellectual property developed during the course of his employment.

David C. Lubner

Effective upon closing of our initial public offering in October 2016, Mr. Lubner entered into a new employment agreement with us. Pursuant to the employment agreement, Mr. Lubner's annual base salary was initially set at \$350,000 and he was eligible to earn an annual cash incentive bonus with a target rate equal to 30% of his base salary. The base salary is subject to annual review and adjustment. As of January 1, 2017, his annual base salary and the target rate of his annual cash incentive bonus increased to \$365,000 and 35%, respectively. Mr. Lubner is also eligible to participate in the employee benefit plans available to our employees, subject to the terms of those plans.

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Mr. Lubner's employment agreement provides that, in the event that his employment is terminated by us without "cause" or he resigns for "good reason" (both as defined in the employment agreement) subject to the execution and effectiveness of a separation agreement, including a general release of claims in our favor, he will be entitled to: (i) an amount equal to six months of his annual base salary plus a pro-rated portion of his target bonus, payable in substantially equal installments over six months and (ii) if Mr. Lubner is participating in our group health plan immediately prior to his termination, a monthly cash payment equal to the monthly contribution we would have made to fund Mr. Lubner's health insurance had he remained employed with us, payable for the earlier of six months or the end of Mr. Lubner's COBRA health continuation period.

If Mr. Lubner's employment is terminated by us without cause or he resigns for good reason, in either case within 12 months following a "change in control" (as defined in the employment agreement), subject to the execution and effectiveness of a separation agreement, including a general release of claims in our favor, he will be entitled to the following, in lieu of the payments and benefits described in the preceding paragraph: (i) a lump sum cash payment equal to his then-current base salary (or his base salary in effect immediately prior to the change in control, if higher) and his target annual incentive compensation, (ii) if Mr. Lubner is participating in our group health plan immediately prior to his termination, a monthly cash payment equal to the monthly contribution we would have made to fund Mr. Lubner's health insurance had he remained employed with us, payable for the earlier of 12 months or the end of Mr. Lubner's COBRA health continuation period; and (iii) the acceleration of all time-based equity awards held by Mr. Lubner.

In addition, Mr. Lubner has entered into an employee confidentiality and assignment agreement agreeing to, among other things: (1) not compete with us during his employment and for a period of 12 months year after the termination of such employment, (2) not solicit our employees during his employment and for a period of 12 months after the termination of such employment, (3) protect our confidential and proprietary information and (4) assign to us related intellectual property developed during the course of his employment.

Dr. Simon Read

Effective upon closing of our initial public offering in October 2016, Dr. Read entered into a new employment agreement with us. Pursuant to the employment agreement, Dr. Read's annual base salary was initially set at \$310,000 and he was eligible to earn an annual cash incentive bonus with a target rate equal to 30% of his base salary. As of January 1, 2017, his annual base salary and the target rate of his annual cash incentive bonus increased to \$317,000 and 35%, respectively. The base salary is subject to annual review and adjustment. Dr. Read is also eligible to participate in the employee benefit plans available to our employees, subject to the terms of those plans.

Dr. Read's employment agreement provides that, in the event that his employment is terminated by us without "cause" or he resigns for "good reason" (both as defined in the employment agreement) subject to the execution and effectiveness of a separation agreement, including a general release of claims in our favor, he will be entitled to: (i) an amount equal to six months of his annual base salary plus a pro-rated portion of his target bonus, payable in substantially equal installments over six months and (ii) if Dr. Read is participating in our group health plan immediately prior to his termination, a monthly cash payment equal to the monthly contribution we would have made to fund Dr. Read's health insurance had he remained employed with us, payable for the earlier of six months or the end of Dr. Read's COBRA health continuation period.

If Dr. Read's employment is terminated by us without cause or he resigns for good reason, in either case within 12 months following a "change in control" (as defined in the employment agreement), subject to the execution and effectiveness of a separation agreement, including a general release of claims in our favor, he will be entitled to the following, in lieu of the payments and benefits

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described in the preceding paragraph: (i) a lump sum cash payment equal to his then-current base salary (or his base salary in effect immediately prior to the change in control, if higher) and his target annual incentive compensation, (ii) if Dr. Read is participating in our group health plan immediately prior to his termination, a monthly cash payment equal to the monthly contribution we would have made to fund Dr. Read's health insurance had he remained employed with us, payable for the earlier of 12 months or the end of Dr. Read's COBRA health continuation period; and (iii) the acceleration of all time-based equity awards held by Dr. Read.

In addition, Dr. Read has entered into an employee confidentiality and assignment agreement agreeing to, among other things: (1) not compete with us during his employment and for a period of 12 months year after the termination of such employment, (2) not solicit our employees during his employment and for a period of 12 months after the termination of such employment, (3) protect our confidential and proprietary information and (4) assign to us related intellectual property developed during the course of his employment.

Dr. Ramin Farzaneh-Far

Effective upon closing of our initial public offering in October 2016, Dr. Farzaneh-Far entered into a new employment agreement with us. Pursuant to the employment agreement, Dr. Farzaneh-Far's annual base salary was initially set at \$350,000 and he was eligible to earn an annual cash incentive bonus with a target rate equal to 30% of his base salary. The base salary is subject to annual review and adjustment. As of January 1, 2017, his annual base salary and the target rate of his annual cash incentive bonus increased to \$365,000 and 35%, respectively. Dr. Farzaneh-Far is also eligible to participate in the employee benefit plans available to our employees, subject to the terms of those plans.

Dr. Farzaneh-Far's employment agreement provides that, in the event that his employment is terminated by us without "cause" or he resigns for "good reason" (both as defined in the employment agreement) subject to the execution and effectiveness of a separation agreement, including a general release of claims in our favor, he will be entitled to: (i) an amount equal to six months of his annual base salary plus a pro-rated portion of his target bonus, payable in substantially equal installments over six months and (ii) if Dr. Farzaneh-Far is participating in our group health plan immediately prior to his termination, a monthly cash payment equal to the monthly contribution we would have made to fund Dr. Farzaneh-Far's health insurance had he remained employed with us, payable for the earlier of six months or the end of Dr. Farzaneh-Far's COBRA health continuation period.

If Dr. Farzaneh-Far's employment is terminated by us without cause or he resigns for good reason, in either case within 12 months following a "change in control" (as defined in the employment agreement), subject to the execution and effectiveness of a separation agreement, including a general release of claims in our favor, he will be entitled to the following, in lieu of the payments and benefits described in the preceding paragraph: (i) a lump sum cash payment equal to his then-current base salary (or his base salary in effect immediately prior to the change in control, if higher) and his target annual incentive compensation, (ii) if Dr. Farzaneh-Far is participating in our group health plan immediately prior to his termination, a monthly cash payment equal to the monthly contribution we would have made to fund Dr. Farzaneh-Far's health insurance had he remained employed with us, payable for the earlier of 12 months or the end of Dr. Farzaneh-Far's COBRA health continuation period; and (iii) the acceleration of all time-based equity awards held by Dr. Farzaneh-Far.

In addition, Dr. Farzaneh-Far has entered into an employee confidentiality and assignment agreement agreeing to, among other things: (1) not compete with us during his employment and for a period of 12 months year after the termination of such employment, (2) not solicit our employees during his employment and for a period of 12 months after the termination of such employment,

(3) protect our confidential and proprietary information and (4) assign to us related intellectual property developed during the course of his employment.

Outstanding Equity Awards at Fiscal Year-End 2016

The following table provides information with respect to outstanding stock options held by each of our named executive officers as of December 31, 2016.

Name	Grant Date	Option Awards(1)			
		Number of Securities Underlying Unexercised Options (#) Exercisable	Number of Securities Underlying Unexercised Options (#) Unexercisable	Option Exercise Price (\$)	Option Expiration Date
Douglas A. Treco, Ph.D.	12/10/15(2)	95,220	285,610	2.87	12/10/25
	8/16/16(3)	13,692	150,593	5.60	8/16/26
David C. Lubner	2/29/16(4)	1,222	28,063	2.87	2/28/26
	2/29/16(5)	—	178,570	2.87	2/28/26
	8/16/16(6)	—	28,571	5.60	8/16/26
Simon Read, Ph.D.	6/16/16(7)	—	142,856	2.87	6/16/26
	8/16/16(8)	—	25,000	5.60	8/16/26
Ramin Farzaneh-Far, M.D.	8/16/16(9)	—	25,000	5.60	8/16/26
	8/16/16(10)	—	165,714	5.60	8/16/26

- (1) All stock options were granted pursuant to our 2010 Stock Option and Grant Plan.
- (2) The shares underlying this stock option vest in 48 equal installments at the end of each month beginning December 2015. This stock option is subject to accelerated vesting as described above under the heading "Employment Arrangements with Our Named Executive Officers—Dr. Douglas Treco."
- (3) The shares underlying this stock option vest in 48 equal installments at the end of each month beginning September 2016. This stock option is subject to accelerated vesting as described above under the heading "Employment Arrangements with Our Named Executive Officers—Dr. Douglas Treco."
- (4) The shares underlying this stock option vest in 48 equal installments at the end of each month beginning November 2016. This stock option is subject to accelerated vesting as described above under the heading "Employment Arrangements with Our Named Executive Officers—David Lubner."
- (5) The shares underlying this stock option vest over four (4) years beginning on January 11, 2016, at a rate of twenty-five percent (25%) on January 11, 2017, 3,721 shares on February 28, 2017 and in 35 equal monthly installments thereafter. This stock option is subject to accelerated vesting as described above under the heading "Employment Arrangements with Our Named Executive Officers—David Lubner."
- (6) The shares underlying this stock option vest over four (4) years beginning on August 16, 2016, at a rate of 2,976 shares on January 31, 2017 and in 43 equal monthly installments thereafter. This stock option is subject to accelerated vesting as described above under the heading "Employment Arrangements with Our Named Executive Officers—David Lubner."

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- (7) The shares underlying this stock option vest over four (4) years beginning on April 4, 2016, at a rate of twenty-five percent (25%) on April 4, 2017, and in 36 equal monthly installments thereafter. This stock option is subject to accelerated vesting as described above under the heading "Employment Arrangements with Our Named Executive Officers—Dr. Simon Read."
- (8) The shares underlying this stock option vest over four (4) years beginning on August 16, 2016, at a rate of 4,168 shares on April 30, 2017 and in 40 equal monthly installments thereafter. This stock option is subject to accelerated vesting as described above under the heading "Employment Arrangements with Our Named Executive Officers—Dr. Simon Read."
- (9) The shares underlying this stock option vest over four (4) years beginning on August 16, 2016, at a rate of 5,731 shares on July 31, 2017 and in 37 equal monthly installments thereafter. This stock option is subject to accelerated vesting as described above under the heading "Employment Arrangements with Our Named Executive Officers—Dr. Farzaneh-Far."
- (10) The shares underlying this stock option vest over four (4) years beginning on July 11, 2016, at a rate of twenty-five percent (25%) of the shares on July 11, 2017, 3,453 of the shares on August 31, 2017 and in 35 equal monthly installments thereafter. This stock option is subject to accelerated vesting as described above under the heading "Employment Arrangements with Our Named Executive Officers—Dr. Farzaneh-Far."

Compensation Committee Interlocks and Insider Participation

During 2016, Mr. Lettmann, Mr. Pearson and Dr. Heft served as members of our compensation committee. No member of the compensation committee was an employee or officer of Ra Pharma during 2016, is a former officer of Ra Pharma, or had any other relationship with us requiring disclosure herein.

During the last fiscal year, none of our executive officers served as: (1) a member of the compensation committee (or other committee of the board of directors performing equivalent functions or, in the absence of any such committee, the entire board of directors) of another entity, one of whose executive officers served on our compensation committee; (2) a director of another entity, one of whose executive officers served on our compensation committee; or (3) a member of the compensation committee (or other committee of the board of directors performing equivalent functions or, in the absence of any such committee, the entire board of directors) of another entity, one of whose executive officers served on our board of directors.

REPORT OF THE COMPENSATION COMMITTEE OF THE BOARD OF DIRECTORS

The information contained in this compensation committee report shall not be deemed to be (1) "soliciting material," (2) "filed" with the SEC, (3) subject to Regulations 14A or 14C of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), or (4) subject to the liabilities of Section 18 of the Exchange Act. No portion of this compensation committee report shall be deemed to be incorporated by reference into any filing under the Securities Act of 1933, as amended (the "Securities Act") or the Exchange Act, through any general statement incorporating by reference in its entirety the proxy statement in which this report appears, except to the extent that Ra Pharmaceuticals, Inc. specifically incorporates this report or a portion of it by reference. In addition, this report shall not be deemed filed under either the Securities Act or the Exchange Act.

The compensation committee has reviewed and discussed the section captioned "Executive Compensation" with management. Based on such review and discussions, the compensation committee recommended to the board of directors that this "Executive Compensation" section be included in this proxy statement.

Compensation Committee
Jason Lettmann (Chairman)
Timothy R. Pearson
Robert Hefl, Ph.D.

RELATED PARTY TRANSACTIONS**Certain Relationships and Transactions**

Based on a review of the transactions and arrangements between us and any related person or related person affiliate, we describe below the transactions or arrangements during the year ended December 31, 2016 in which any related person or related person affiliate has a direct or indirect material interest and the amount involved exceeds \$120,000.

Series B Convertible Preferred Stock Financing. In June 2016, we sold an aggregate of 29,362,452 shares of our Series B-2 convertible preferred stock at a purchase price of \$0.99617 per share. The following table summarizes purchases of our Series B-2 convertible preferred stock by related persons:

Name	Shares of Series B-2 Convertible Preferred Stock	Total Purchase Price
Entities affiliated with Lightstone Ventures(1)(2)	4,015,378	\$ 3,999,999.11
Morgenthaler Venture Partners IX L.P.(3)	3,408,439	\$ 3,395,384.68
New Enterprise Associates 13, L.P.(4)	4,362,472	\$ 4,345,763.74
Novartis Bioventures Ltd(5)	3,402,729	\$ 3,389,696.55
Novo A/S(6)	6,023,068	\$ 5,999,999.65
RA Capital Healthcare Fund, L.P.(7)	3,304,656	\$ 3,291,999.17

- (1) Jason Lettmann, a partner of Lightstone Ventures, is a member of our board of directors.
- (2) Consists of: (i) 3,533,875 shares of Series B-2 convertible preferred stock purchased and received by Lightstone Ventures, L.P. and (ii) 481,503 shares of Series B-2 convertible preferred stock purchased and received by Lightstone Ventures (A), L.P.
- (3) Jason Lettmann, a partner of Morgenthaler Ventures, which is an affiliate of Morgenthaler Venture Partners IX L.P., is a member of our board of directors.
- (4) Edward T. Mathers, a partner at New Enterprise Associates, Inc., which is an affiliate of New Enterprise Associates 13, L.P., is a member of our board of directors.
- (5) All shares issued upon conversion of Novartis International Pharmaceutical Investment Ltd.'s convertible notes were issued to and are included under Novartis Bioventures Ltd. Markus Goebel, M.D., Ph.D., a former member of our board of directors, is an employee of an affiliate of Novartis International Pharmaceutical Investment Ltd. and Novartis Bioventures Ltd.
- (6) Peter Tuxen Bisgaard, a partner at Novo Ventures (US) Inc., which provides consultancy services to Novo A/S, is a member of our board of directors.
- (7) Rajeev Shah, a managing director and portfolio manager at RA Capital Management, which is an affiliate of RA Capital Healthcare Fund, L.P., is a member of our board of directors.

Investors' Rights Agreement. In connection with our Series B preferred stock financing, we entered into investors' rights agreements containing registration rights, among other things, with certain holders of our preferred stock and certain holders of our common stock, as more fully described in "Description of Capital Stock—Registration Rights."

Participation in our initial public offering. Certain of our existing stockholders, including stockholders affiliated with certain of our directors, purchased an aggregate of approximately

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\$19.5 million in shares of our common stock in our initial public offering in October 2016 at the initial public offering price. The underwriting discount for the shares sold to such stockholders in the initial public offering was the same as the underwriting discount for the shares sold to the public.

Indemnification Agreements. We have entered into agreements to indemnify our directors and executive officers. These agreements, among other things, require us to indemnify these individuals for certain expenses (including attorneys' fees), judgments, fines and settlement amounts reasonably incurred by such person in any action or proceeding, including any action by or in our right, on account of any services undertaken by such person on behalf of our company or that person's status as a member of our board of directors to the maximum extent allowed under Delaware law.

Procedures for Approval of Related Party Transactions

Our board of directors reviews and approves transactions with directors, officers and holders of 5% or more of our capital stock and their affiliates, each of whom we refer to as a related party. We have adopted a written related party transaction approval policy that governs the review of related party transactions. Pursuant to this policy, our audit committee shall review the material facts of all related party transactions. The audit committee shall take into account, among other factors that it deems appropriate, whether the related party transaction is on terms no less favorable to us than terms generally available in a transaction with an unrelated third party under the same or similar circumstances and the extent of the related party's interest in the related party transaction. Further, 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 are disclosed to the stockholders, who must approve the transaction in good faith.

TRANSACTION OF OTHER BUSINESS

The board of directors knows of no other matters that will be presented for consideration at the Annual Meeting. If any other matters are properly brought before the Annual Meeting, the persons appointed in the accompanying proxy intend to vote the shares represented thereby in accordance with their best judgment on such matters, under applicable laws.

ADDITIONAL INFORMATION

Procedures for Submitting Stockholder Proposals

Requirements for Stockholder Proposals to be Brought Before the Annual Meeting. Our bylaws provide that, for nominations of persons for election to our board of directors or other proposals to be considered at an annual meeting of stockholders, a stockholder must give written notice to our Corporate Secretary at Ra Pharmaceuticals, Inc., 87 Cambridge Park Drive, Cambridge, MA 02140, not later than the close of business 90 days, nor earlier than the close of business 120 days, prior to the first anniversary of the date of the preceding year's annual meeting. However, the bylaws also provide that in the event the date of the annual meeting is more than 30 days before or more than 60 days after such anniversary date, notice must be delivered not later than the close of business on the later of the 90th day prior to such annual meeting or the 10th day following the day on which public announcement of the date of such meeting is first made. Any nomination must include all information relating to the nominee that is required to be disclosed in solicitations of proxies for election of directors in election contests or is otherwise required under Regulation 14A of the Exchange Act, the person's written consent to be named in the Proxy Statement and to serve as a director if elected and such information as we might reasonably require to determine the eligibility of the person to serve as a director. As to other business, the notice must include a brief description of the business desired to be brought before the meeting, the reasons for conducting such business at the meeting, and any material interest of such stockholder (and the beneficial owner) in the proposal. The proposal must be a proper subject for stockholder action. In addition, to make a nomination or proposal, the stockholder must be of record at the time the notice is made and must provide certain information regarding itself (and the beneficial owner), including the name and address, as they appear on our books, of the stockholder proposing such business, the number of shares of our capital stock which are, directly or indirectly, owned beneficially or of record by the stockholder proposing such business or its affiliates or associates (as defined in Rule 12b-2 promulgated under the Exchange Act) and certain additional information.

The advance notice requirements for the Annual Meeting, which is the first annual meeting following the initial public offering of our common stock, are as follows: a stockholder's notice shall be timely if delivered to our corporate secretary prior to the meeting at which the action is to be taken. Generally, to be timely, notice must be received at our principal executive offices not less than 90 days nor more than 120 days prior to the first anniversary date of the annual meeting for the preceding year. Our bylaws specify the requirements as to form and content of all stockholders' notices. These requirements may preclude stockholders from bringing matters before the stockholders at an annual or special meeting.

Requirements for Stockholder Proposals to be Considered for Inclusion in the Company's Proxy Materials. In addition to the requirements stated above, any stockholder who wishes to submit a proposal for inclusion in our proxy materials must comply with Rule 14a-8 promulgated under the Exchange Act. For such proposals to be included in our proxy materials relating to our 2018 annual meeting of stockholders, all applicable requirements of Rule 14a-8 must be satisfied and we must receive such proposals no later than December 29, 2017. Such proposals must be delivered to our Corporate Secretary at Ra Pharmaceuticals, Inc., 87 Cambridge Park Drive, Cambridge, MA 02140.

RA PHARMACEUTICALS, INC.
 87 CAMBRIDGE PARK DRIVE
 CAMBRIDGE, MA 02140

Investor Address Line 1
 Investor Address Line 2
 Investor Address Line 3
 Investor Address Line 4
 Investor Address Line 5
 John Sample
 1234 ANYWHERE STREET
 ANY CITY, ON A1A 1A1

1 OF 2



VOTE BY INTERNET - www.proxyvote.com
 Use the Internet to transmit your voting instructions and for electronic delivery of information up until 11:59 P.M. Eastern Time the day before the cut-off date or meeting date. Have your proxy card in hand when you access the web site and follow the instructions to obtain your records and to create an electronic voting instruction form.

VOTE BY PHONE - 1-800-690-6903
 Use any touch-tone telephone to transmit your voting instructions up until 11:59 P.M. Eastern Time the day before the cut-off date or meeting date. Have your proxy card in hand when you call and then follow the instructions.

VOTE BY MAIL
 Mark, sign and date your proxy card and return it in the postage-paid envelope we have provided or return it to Vote Processing, c/o Broadridge, 51 Mercedes Way, Edgewood, NY 11717.

NAME
 THE COMPANY NAME INC. - COMMON
 THE COMPANY NAME INC. - CLASS A
 THE COMPANY NAME INC. - CLASS B
 THE COMPANY NAME INC. - CLASS C
 THE COMPANY NAME INC. - CLASS D
 THE COMPANY NAME INC. - CLASS E
 THE COMPANY NAME INC. - CLASS F
 THE COMPANY NAME INC. - 401 K

CONTROL # → 0000000000000000

SHARES

THE COMPANY NAME INC. - COMMON	123,456,789,012.12345
THE COMPANY NAME INC. - CLASS A	123,456,789,012.12345
THE COMPANY NAME INC. - CLASS B	123,456,789,012.12345
THE COMPANY NAME INC. - CLASS C	123,456,789,012.12345
THE COMPANY NAME INC. - CLASS D	123,456,789,012.12345
THE COMPANY NAME INC. - CLASS E	123,456,789,012.12345
THE COMPANY NAME INC. - CLASS F	123,456,789,012.12345
THE COMPANY NAME INC. - 401 K	123,456,789,012.12345

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TO VOTE, MARK BLOCKS BELOW IN BLUE OR BLACK INK AS FOLLOWS:

KEEP THIS PORTION FOR YOUR RECORDS
 DETACH AND RETURN THIS PORTION

THIS PROXY CARD IS VALID ONLY WHEN SIGNED AND DATED.

The Board of Directors recommends you vote FOR the following:

	For All	Withhold All	For All Except	To withhold authority to vote for any individual nominee(s), mark "For All Except" and write the number(s) of the nominee(s) on the line below.
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

1. Election of two Class I Directors:
 Nominees
 01 Douglas A. Treco, Ph.D. 02 Edward T. Mathers

The Board of Directors recommends you vote FOR the following proposal:

2. To ratify the appointment of Deloitte & Touche LLP as our independent registered public accounting firm for the fiscal year ending December 31, 2017.	For	Again
	<input type="checkbox"/>	<input type="checkbox"/>

NOTE: To conduct any other business that properly comes before the Annual Meeting (including adjournments and postponements thereof).

335919_1 R1.0.1.15

Please sign exactly as your name(s) appear(s) hereon. When signing as attorney, executor, administrator, or other fiduciary, please give full title as such. Joint owners should each sign personally. All holders must sign. If a corporation or partnership, please sign in full corporate or partnership name by authorized officer.

Investor Address Line 1
 Investor Address Line 2
 Investor Address Line 3
 Investor Address Line 4
 Investor Address Line 5
 John Sample
 1234 ANYWHERE STREET
 ANY CITY, ON A1A 1A1

0000

partnership name, by authorized officer.

--	--

Signature [PLEASE SIGN WITHIN BOX]

Date

JOB #

--	--

Signature (Joint Owners)

Date

S
C
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Important Notice Regarding the Availability of Proxy Materials for the Annual Meeting: The Annual Report, Notice & Proxy Statement available at www.proxyvote.com

**RA PHARMACEUTICALS, INC.
Annual Meeting of Shareholders
June 20, 2017 10:00 AM**

This proxy is solicited by the Board of Directors

The shareholder(s) hereby appoints Douglas A. Treco and David C. Lubner, or either of them, as proxies, each with the power to appoint his substitute, and hereby authorizes them to represent and to vote, as designated on the reverse side of this ballot, all of the shares of Common stock of RA PHARMACEUTICALS, INC. that the shareholder(s) is/are entitled to vote at the Annual Meeting of shareholder(s) to be held at 10:00 AM, EDT on 6/20/2017, at the offices of Goodwin Procter LLP, 100 Northern Avenue, Boston, MA 02210, and 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.

Continued and to be signed on reverse side
