

Use these links to rapidly review the document

[TABLE OF CONTENTS](#)

[Table of Contents](#)

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 27, 2018

Dear Ra Pharma Stockholder:

I am pleased to invite you to attend the 2018 Annual Meeting of Stockholders (the "**Annual Meeting**") of Ra Pharmaceuticals, Inc. ("**Ra Pharma**" or the "**Company**") to be held on Wednesday, June 28, 2018 at 9:00 a.m. Eastern Time at the offices of Latham & Watkins LLP, located at 200 Clarendon Street, Boston, MA 02116.

At this year's Annual Meeting, our stockholders will be asked to: (1) elect the two nominees for Class II 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, 2018; and (3) transact any other business that properly comes before the Annual Meeting (including adjournments, continuations 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 Internet Availability of Proxy Materials that you received in the mail (unless you have previously requested a paper copy of our proxy materials). The Notice also contains instructions on how to request a paper copy of our proxy materials and our 2017 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 and have received our Notice of Internet Availability of Proxy Materials, then instructions regarding how you can vote are contained in that notice. If you requested to receive a printed set of the proxy materials, please vote 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 2018 ANNUAL MEETING OF STOCKHOLDERS
To Be Held on June 28, 2018

Notice is hereby given that Ra Pharmaceuticals, Inc. will hold its 2018 Annual Meeting of Stockholders (the "**Annual Meeting**") on Wednesday, June 28, 2018 at 9:00 a.m. Eastern Time at the offices of Latham & Watkins LLP, located at 200 Clarendon Street, Boston, MA 02116, to accomplish the following purposes:

- elect two Class II directors, namely Robert Heft, Ph.D. and Rajeev Shah, to hold office until the 2021 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, 2018; and
- transact any other business that properly comes before the Annual Meeting (including adjournments, continuations and postponements thereof).

The Annual Meeting will begin promptly at 9:00 a.m. Eastern Time, and check-in will begin at 8:30 a.m. Eastern Time. Only stockholders of record at the close of business on April 30, 2018 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 30, 2018 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 (the "**Notice**") instead of a paper copy of our proxy materials and our 2017 Annual Report on Form 10-K (the "**Annual Report**"). 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 Annual Report. 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

[Table of Contents](#)

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 27, 2018

Important Notice Regarding the Availability of Proxy Materials for the Ra Pharma 2018 Annual Meeting of Stockholders to Be Held on June 28, 2018: The Notice of 2018 Annual Meeting of Stockholders, proxy statement and our Annual Report on Form 10-K for the fiscal year ended December 31, 2017 are available at www.proxyvote.com. To obtain directions to the offices of Latham & Watkins LLP, 200 Clarendon Street, Boston, MA 02116 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.



TABLE OF CONTENTS

	<u>Page</u>
PROXY STATEMENT	1
GENERAL INFORMATION	1
PROPOSAL ONE ELECTION OF DIRECTORS	5
Number of Directors; Board Structure	5
Nominees	5
Recommendation of the Board of Directors	6
Nominees for Election for a Three-Year Term Ending at the 2021 Annual Meeting	6
Directors Continuing in Office Until the 2019 Annual Meeting	7
Directors Continuing in Office Until the 2020 Annual Meeting	7
Executive Officers	8
CORPORATE GOVERNANCE	10
Meetings of the Board of Directors	10
Code of Business Conduct and Ethics	10
Policy on Trading, Pledging and Hedging of Company Stock	10
Independence of the Board of Directors	10
Identifying and Evaluating Director Nominees	11
Minimum Qualifications	11
Stockholder Recommendations	12
Stockholder Communications	12
Board Leadership Structure and Board's Role in Risk Oversight	12
Risks Related to Compensation Policies and Practices	13
Board Committees	13
Audit Committee	13
Compensation Committee	14
Nominating and Corporate Governance Committee	15
2017 Director Compensation	15
PROPOSAL TWO RATIFICATION OF THE APPOINTMENT OF OUR INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM	18
Policy on Audit Committee Pre-Approval of Audit and Permissible Non-Audit Services of Independent Registered Public Accounting Firm	18
Audit Fees	18
Recommendation of the Board of Directors	19
Report of the Audit Committee of the Board of Directors	20
SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT	21
Section 16(a) Beneficial Ownership Reporting Compliance	23
Equity Compensation Plan Information	23
EXECUTIVE COMPENSATION	25
Compensation Overview	25

<u>Setting Executive Compensation</u>	<u>25</u>
<u>Elements of Compensation</u>	<u>26</u>
<u>Summary Compensation Table</u>	<u>28</u>
<u>Employment Agreements with Our Named Executive Officers</u>	<u>28</u>
<u>Outstanding Equity Awards at Fiscal Year-End 2017</u>	<u>31</u>
<u>Compensation Committee Interlocks and Insider Participation</u>	<u>32</u>
<u>CERTAIN RELATIONSHIPS AND TRANSACTIONS</u>	<u>33</u>
<u>Relationships and Transactions with Directors, Executive Officers and Significant Stockholders</u>	<u>33</u>

[Table of Contents](#)

	<u>Page</u>
Procedures for Approval of Related Party Transactions	33
TRANSACTION OF OTHER BUSINESS	34
ANNUAL REPORT ON FORM 10-K	34
ADDITIONAL INFORMATION	35
Procedures for Submitting Stockholder Proposals for the 2019 Annual Meeting of Stockholders	35



PROXY STATEMENT

FOR THE 2018 ANNUAL MEETING OF STOCKHOLDERS TO BE HELD JUNE 28, 2018

GENERAL INFORMATION

Our board of directors has made this proxy statement ("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 2018 Annual Meeting of Stockholders (the "Annual Meeting"), and any adjournment, continuation or postponement 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 9 a.m. Eastern Time at the offices of Latham & Watkins LLP, located at 200 Clarendon Street, Boston, MA 02116.

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 3, 2018.

IMPORTANT NOTICE REGARDING THE AVAILABILITY OF PROXY MATERIALS FOR THE STOCKHOLDER MEETING TO BE HELD ON JUNE 28, 2018: The Notice of 2018 Annual Meeting of Stockholders, this proxy statement, and our 2017 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 30, 2018
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:	32,286,684 shares of common stock outstanding as of April 27, 2018.
Voting:	<p>There are four ways a stockholder of record can vote:</p> <ol style="list-style-type: none">(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 27, 2018. 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. Your attendance at the Annual Meeting by itself will not revoke your proxy unless you give written notice of revocation to the Corporate Secretary before your proxy is voted or you vote in person at the Annual Meeting.

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 vote required is the plurality of the votes cast. This means that the two nominees receiving the highest number of affirmative "FOR" votes will be elected as Class II directors.

For Proposal Two, the ratification of the appointment of Deloitte & Touche LLP as our independent registered public accounting firm for the fiscal year ending December 31, 2018, the vote required is a majority of the votes properly cast.

Effect of Abstentions and Broker Non-Votes

Votes withheld from any nominee, abstentions, and "broker nonvotes" (*i.e.*, where a broker has not received voting instructions from the beneficial owner and 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, 2018.

Brokers who do not receive voting instructions from the beneficial owner 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 from the beneficial owner. 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. Broker nonvotes will have no effect on the outcome of Proposal One. We do not expect any broker nonvotes in connection with Proposal Two.

Voting Instructions

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.

Voting Results

A representative of Broadridge Financial Solutions, Inc., our inspector of election, will tabulate and certify the votes. 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.

Additional Solicitation/Costs

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.

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 following the fifth anniversary of the completion of our initial public offering (December 31, 2021), (2) the last day of the fiscal year in which we have total annual gross revenue of at least \$1.07 billion, (3) the date on 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, or (4) 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, 2017, 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. Our board of directors currently consists 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 II directors expires at the Annual Meeting. The term of the Class III directors expires at the 2019 annual meeting and the term of the Class I directors expires at the 2020 annual meeting. After the initial terms expire, directors are expected to be elected to hold office for a three-year term and 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 27, 2018:

Name	Age	Position
<i>Directors whose terms will expire at the 2018 Annual Meeting</i>		
Robert Heft, Ph.D.(2)	63	Director
Jason Lettmann(2)	40	Director
Rajeev Shah(1)(3)	40	Director
<i>Directors whose terms will expire at the 2019 Annual Meeting</i>		
Timothy R. Pearson(1)(2)	50	Director
Peter Tuxen Bisgaard(1)(3)	44	Director
<i>Directors whose terms will expire at the 2020 Annual Meeting</i>		
Douglas A. Treco, Ph.D.	60	President, Chief Executive Officer and Director
Edward T. Mathers(3)	58	Chairman of the Board and Director

- (1) Member of the Audit Committee.
- (2) Member of the Compensation Committee. Mr. Lettmann has not been nominated for re-election as a Class II Director at the Annual Meeting following the end of his current term. The board of directors has appointed Rajeev Shah to serve on the Compensation Committee, and as the chair of such committee, upon the conclusion of the Annual Meeting.
- (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 Robert Heft, Ph.D. and Rajeev Shah for election as Class II directors to serve for a three-year term ending at the 2021 annual meeting and 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. Jason Lettmann has not been nominated for re-election as a Class II Director at the Annual Meeting following the end of his current term. Proxies cannot be voted for a greater number of persons than the number of nominees named in this proposal.

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 to serve, or for good cause will not serve as a director 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 listing rules 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 2021 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 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 Parvov Therapeutics Inc., Zingenix Ltd., VisionGate, Inc., Lumos Pharma Inc., and Clementia Pharmaceuticals, Inc. 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.

Rajeev Shah has served as a member of our board of directors since July 2015. Mr. Shah has been a portfolio manager and managing director at RA Capital Management, LLC, an investment advisory firm that invests in healthcare and life science companies since 2004. Mr. Shah is also a member of the board of directors of Kala Pharmaceuticals, Inc. and Solid Biosciences Inc. Mr. Shah was previously a member of the board of directors of KalVista Pharmaceuticals from 2015 through April 2018. 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 Management, 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. Mr. Bisgaard is currently the Managing Director of NF Life Sciences, a global health care and life sciences investment firm. From 2009 to August 2017, Mr. Bisgaard was previously employed as a partner of Novo Ventures (US), Inc., which 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 private companies Eargo, Inc. and Chromaderm, Inc. He is 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., and past member of the board for a number of private companies including Inozyme Pharma, LLC, Bolt Therapeutics, Inc., and Entasis Therapeutics. Mr. Bisgaard obtained his M.Sc. in 1998 from the Technical 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.

Directors Continuing in Office Until the 2020 Annual Meeting

Douglas A. Treco, Ph.D. has been our Chief Executive Officer and a director on our board of directors since our inception in 2008. 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., Lumos

[Table of Contents](#)

Pharma, Inc., Amplyx Pharmaceuticals, Inc., Inozyme Pharma, Inc., Senti Biosciences, Inc. Akous, Inc., Reneo Pharma, Trevi Therapeutics 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.

Executive Officers

The following presents our current executive officers and their respective ages and positions as of April 27, 2018:

Name	Age	Position
Douglas A. Treco, Ph.D.	60	Director, President and Chief Executive Officer
David C. Lubner	54	Executive Vice President and Chief Financial Officer
Simon Read, Ph.D.	47	Chief Scientific Officer
John C. King	43	Chief Commercial Officer
Ramin Farzaneh-Far, M.D.	41	Chief Medical Officer

See the section of this Proxy Statement captioned "—Directors Continuing in Office Until 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. ("Tetrphase"), 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, which was acquired by IMS Health in 2015. Prior to joining PharMetrics, Mr. Lubner served as Vice President and Chief Financial Officer of ProScript, Inc. from 1996 to 1999. Mr. Lubner is also a member of the board of directors of Nightstar Therapeutics plc. 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, Head of the Innovative Medicines Unit and Head of Global Biomedical Sciences at Grunenthal GmbH, a pharmaceutical company headquartered in Aachen, Germany, from 2011 to March 2016. 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 is an elected fellow of the Royal Society of Medicine and the Royal Society of Biology in the U.K. since 2017 and 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.

John C. King has been our Chief Commercial Officer since April 2018. Before joining our company, Mr. King served as a member of the senior management team of Alexion Pharmaceuticals, Inc. ("Alexion"), a global biopharmaceutical company, from 2009 through March 2018. From 2017 to 2018, Mr. King served as Vice President, U.S. Neurology Business Unit. In this role, he was responsible for building and leading the team launching Soliris® (eculizumab) for gMG in the U.S. At Alexion, he also served as Vice President, Head of Global LAL-D Franchise from 2015 to 2017,

[Table of Contents](#)

Vice President, Head of Global PNH Franchise from 2014 to 2015 and Executive Director, Global Hematology Marketing from 2012 to 2013. Prior to joining Alexion, Mr. King served in commercial roles of increasing responsibility at Wyeth Pharmaceuticals. He began his career at Ernst & Young LLP. Mr. King obtained his B.S. in business logistics and labor relations and his MBA in finance and management from Pennsylvania State University.

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 seven meetings in 2017. 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 2017. 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. Six directors attended the 2017 annual meeting of stockholders.

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, Edward Mathers, Peter Tuxen Bisgaard, Robert Heft, Ph.D., Jason Lettmann, Timothy R. Pearson and Rajeev Shah are "independent directors" under the Nasdaq rules. Douglas A. Treco, Ph.D. is not independent due to his role as 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. In 2018, the board of directors hired a search firm to assist in identifying and evaluating potential director 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

In accordance with the Company's corporate governance guidelines, the nominating and corporate governance committee will consider, among other things, the following minimum qualifications, skills and attributes when recommending candidates for the board of directors' selection as director nominees and as candidates for appointment to the board of directors' committees. The nominee shall be well regarded in the community and have a long-term reputation for high ethical and moral standards, have experience at a strategic or policymaking level in a business, government, non-profit or academic organization of high standing, be highly accomplished in his or her respective field, with superior credentials and recognition, have sufficient time and availability to devote to the affairs of the Company, particularly in light of the number of boards of directors on which such nominee may serve and, to the extent the nominee serves or has previously served on other boards, the nominee shall have a demonstrated history of actively contributing at board meetings.

In identifying and 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. The nominating and corporate governance committee evaluates each individual in the context of the board as a whole, with the objective of assembling a group that can best perpetuate the success of the business and represent

[Table of Contents](#)

stockholder interests through the exercise of sound judgment using its diversity of experience in various areas.

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 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, computer systems and sensitive data, 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, including risks relating to cybersecurity. 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 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 risks that fall 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. The audit committee oversees the operation of our risk management program, including the identification of the primary financial risks associated with our business and periodic updates to such risks, and reports to our board of directors regarding these activities. 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. 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. The compensation committee assesses and monitors whether any of our compensation policies and programs has the potential to encourage excessive risk-taking. The nominating and corporate governance committee oversees risks related to the Company's governance structure and processes. Our board of directors does not believe that its role in the oversight of our risks affects its leadership structure.

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.rapharma.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

[Table of Contents](#)

financial expert," as defined under the applicable rules of the SEC. The audit committee held five meetings during 2017. 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;
- 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, including the Nasdaq rules specific to independence on the compensation committee. The compensation committee held two meetings during 2017. The board of directors has appointed Mr. Shah to serve on the compensation committee, and as chair of such committee, upon the conclusion of the Annual Meeting. 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;

[Table of Contents](#)

- 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.

For discussion of the role of compensation consultants and executive officers in determining executive and director compensation, please refer to "Director Compensation" and "Executive Compensation—Setting Executive Compensation" below.

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 2017. 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.

2017 Director Compensation

The following table provides information for the year ended December 31, 2017, 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 2017. Dr. Treco, who is also our president and chief executive officer, receives no

[Table of Contents](#)

compensation for his service as director, and the compensation received by Dr. Treco as an employee during 2017 is presented in the 2017 Summary Compensation Table below.

Name	Fees Earned or Paid in Cash \$(1)	Option Awards \$(2)	Total \$(3)
Peter Tuxen Bisgaard(3)	17,344	114,335	131,679
Robert Heft, Ph.D.	40,000	222,824	262,824
Jason Lettmann	45,000	222,824	267,824
Edward T. Mathers	67,500	222,824	290,324
Timothy R. Pearson	55,000	222,824	277,824
Rajeev Shah	46,250	222,824	269,074

- (1) Includes amounts earned and paid pursuant to our non-employee director compensation policy, described below.
- (2) The amounts reported represent the aggregate grant-date fair value of stock options awarded to the directors in 2017, calculated in accordance with Financial Accounting Standards Board, Accounting Standards Codification Topic 718, or ASC Topic 718. For information regarding on assumptions underlying the valuation of equity awards, see Note 10 to our audited financial statements contained in our Annual Report on Form 10-K for the year ended December 31, 2017. This amount does not correspond to the actual value that may be recognized by the named director upon vesting of the applicable awards. As of December 31, 2017, our non-employee directors held the following outstanding equity awards:

Name	Shares Subject to Outstanding Options
Peter Tuxen Bisgaard	15,000
Robert Heft, Ph.D.	37,857
Jason Lettmann	15,000
Edward T. Mathers	15,000
Timothy R. Pearson	37,857
Rajeev Shah	15,000

- (3) Mr. Bisgaard left Novo Ventures (US), Inc. in August 2017 and began receiving his director compensation effective August 16, 2017. Mr. Bisgaard had previously elected to waive his director compensation.

In connection with our initial public offering in October 2016, following its review of a benchmarking analysis of our peer companies' director compensation programs performed by our independent compensation consultant, our board of directors adopted a non-employee director compensation policy, as described below. Our non-employee director compensation policy 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 are paid cash compensation as set forth below.

	Annual Retainer
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 receives an initial, one-time equity award of 25,000 shares, which vests 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 is eligible to receive an annual equity award of 15,000 shares, which vests 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 are granted with an exercise price 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, 2018, and we are asking you and other stockholders to ratify this appointment. Deloitte & Touche LLP has audited our financial statements for fiscal years 2017, 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, the audit committee will consider this fact when it appoints the independent registered public accounting firm for the fiscal year ending December 31, 2019. Even if the appointment of Deloitte & Touche LLP is ratified, the audit committee retains the discretion to appoint a different independent registered public accounting firm at any time if it determines that such a change is in the interests of the Company.

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

We have 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, subject to available exceptions under SEC rules. 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 2017 and 2016:

<u>Fee Category</u>	<u>2017</u>	<u>2016</u>
Audit Fees	\$ 395,000	\$ 976,190
Audit-Related Fees	—	—
Tax Fees	35,770	22,160
All Other Fees	1,895	—
Total Fees	<u>\$ 432,665</u>	<u>\$ 998,350</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 and secondary public offerings. Included in the 2016 audit fees is \$695,582 of fees billed in

[Table of Contents](#)

connection with our initial public offering completed in October 2016. Included in the 2017 audit fees is \$35,000 of fees billed in connection with our secondary public offering completed in February 2018.

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

All Other Fees. All other fees consist of fees for accounting research tools.

The audit committee has 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, 2018.

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 2017 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 from the Company.

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 2017 be included in its Annual Report on Form 10-K for 2017.

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 13, 2018, 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 32,286,684 shares of common stock outstanding as of April 13, 2018. Options to purchase shares of our common stock that are exercisable within 60 days of April 13, 2018, 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)	5,490,073	17.0%
Morgenthaler Venture Partners IX, L.P. and affiliates(3)	4,066,501	12.6%
Entities associated with RA Capital Management, LLC(4)	3,851,808	11.9%
Entities associated with Wellington Management Group LLP(5)	2,767,243	8.6%
Novartis Bioventures Ltd.(6)	1,615,996	5.0%
Named Executive Officers and Directors:		
Douglas A. Treco, Ph.D.(7)	591,666	1.8%
David C. Lubner(8)	170,966	*
Ramin Farzaneh-Far, M.D.(9)	125,551	*
Peter Tuxen Bisgaard	—	*
Robert Heft, Ph.D.(10)	15,238	*
Jason Lettmann(11)	2,745,846	8.5%
Edward T. Mathers(12)	—	*
Timothy R. Pearson(13)	15,238	*
Rajeev Shah	—	*
All executive officers and directors as a group (11 persons)(14)	3,776,929	11.4%

* 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.

- (2) The information reported is based on a Schedule 13D/A filed with the SEC on February 27, 2018. 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 directors of NEA 13 LTD are M. James Barrett, Peter J. Barris, Forest Baskett, Patrick J. Kerins, David M. Mott, Scott D. Sandell and Ravi Viswanathan. The directors and each of the entities named above share voting and dispositive power over the shares. The address of NEA 13 is New Enterprise Associates, 1954 Greenspring Drive, Suite 600, Timonium, MD 21093.
- (3) The information reported is based on (i) a Schedule 13D filed with the SEC on November 7, 2016 by Morgenthaler Management Partners IX, LLC, or MMP IX, and certain of its affiliates, including Henry Plain, reporting beneficial ownership of 2,745,846 of such shares, and (ii) a Schedule 13G filed with the SEC on February 14, 2017 by Lightstone Ventures, L.P. and certain of its affiliates, including Henry Plain, reporting beneficial ownership of 1,320,655 of such shares. According to the Schedule 13D, MMP IX, the general partner of Morgenthaler Venture Partners IX, L.P., and Morgenthaler Venture Partners IX, L.P. may be deemed to have sole power to vote and to dispose of 2,745,846 of such 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 2,745,846 of such shares. The address of Morgenthaler Venture Partners IX, L.P. is 3200 Alpine Road Portola Valley, CA 94028. According to the Schedule 13G, Henry Plain also may be deemed to share the power to direct the voting and disposition of 1,320,655 shares owned directly by Lightstone Ventures, L.P. and Lightstone Ventures (A), L.P. The address for Mr. Plain is 500 Boylston Street, Suite 1380, Boston, MA 02116.
- (4) The information reported is based on a Schedule 13D/A filed with the SEC on February 16, 2018. Consists of 3,135,084 shares held by RA Capital Healthcare Fund, L.P. and 716,724 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.
- (5) The information reported is based on a Schedule 13G/A filed with the SEC on February 8, 2018. Wellington Group Holdings LLP, Wellington Investment Advisors Holdings LLP and Wellington Management Group LLP each report shared voting power over 2,469,751 shares and shared dispositive power over 2,767,243 shares of common stock. Wellington Management Company LLP reports shared voting power over 2,440,719 shares and shared dispositive power over 2,575,723 shares of common stock. Such Schedule 13G/A 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 Advisors.

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.

- (6) The information reported is based on a Schedule 13G/A filed with the SEC on February 2, 2018, by Novartis Bioventures Ltd. as of December 31, 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 Lichtstrasse 35, 4056 Basel, Switzerland.
- (7) Includes options to purchase 387,374 shares of common stock that may be exercised within 60 days of April 13, 2018.
- (8) Includes options to purchase 170,966 shares of common stock that may be exercised within 60 days of April 13, 2018.
- (9) Includes options to purchase 125,551 shares of common stock that may be exercised within 60 days of April 13, 2018.
- (10) Includes options to purchase 15,238 shares of common stock that may be exercised within 60 days of April 13, 2018.
- (11) Includes beneficial ownership of the 2,745,846 shares of common stock held by MMP IX and options to purchase 0 shares of common stock that may be exercised within 60 days of April 13, 2018.
- (12) 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' business address is 5425 Wisconsin Ave, Suite 800, Chevy Chase, MD 20815.
- (13) Includes options to purchase 15,238 shares of common stock that may be exercised within 60 days of April 13, 2018.
- (14) Includes options to purchase 826,791 shares of common stock that may be exercised within 60 days of April 13, 2018.

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 2017, 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, 2017 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, or the 2016 ESPP. As of the closing of our initial public offering in

October 2016, no additional equity awards will be made under our 2010 Plan. We do not have any non-stockholder approved equity compensation plans.

Plan Category	Number of Shares of Common Stock to be Issued Upon Exercise of Outstanding Options (a)	Weighted-Average Exercise Price of Outstanding Options (b)	Number of Shares of Common Stock Remaining Available for Future Issuance Under Equity Compensation Plans (Excluding Securities Reflected in Column (a)) (c)
Equity compensation plans approved by stockholders(1)	3,470,068	\$ 9.99	1,248,327(2)
(1) The 2016 Plan contains an "evergreen" provision, pursuant to which the number of shares of common stock reserved for issuance under the plan shall be increased on January 1, 2017 and each January 1 thereafter through the tenth anniversary of the effective date of the 2016 Plan by a number of shares equal to the least of (i) 4% of the Company's common stock issued and outstanding on the preceding December 31, (ii) 2,000,000 shares and (iii) such lesser amount determined by the plan administrator. The 2016 ESPP also contains an evergreen provision, pursuant to which the number of shares of common stock reserved for issuance under the plan shall be increased on January 1, 2017 and each January 1 thereafter through the tenth anniversary of the effective date of the 2016 ESPP by a number of shares equal to the least of (i) 1% of the Company's common stock issued and outstanding on the preceding December 31, (ii) 300,000 shares and (iii) such lesser amount determined by the plan administrator.			
(2) Includes 400,461 shares available under the 2016 ESPP. As of December 31, 2017, there were 0 shares of common stock subject to purchase rights outstanding under such plan as we have not yet commenced any offerings under the plan.			

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 2017, who are Dr. Douglas A. Treco, our president and chief executive officer, David C. Lubner, our executive vice president and chief financial officer, and Dr. Ramin Farzaneh-Far, our chief medical officer. We refer to these three 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 provides 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 2017, 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 2017, Haigh & Company assisted the compensation committee as follows:

- preparing competitive compensation analyses for our employees, including our named executive officers and providing consulting support for 2017 executive compensation actions; and
- providing consulting support and advice related to the adoption of other 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. For 2017, the annual base salaries for Dr. Treco, Mr. Lubner and Dr. Farzaneh-Far were \$440,000, \$365,000 and \$365,000, respectively, increased effective January 1, 2017 from their annual base salaries in effect for 2016 of \$400,000, \$350,000 and \$350,000, respectively.

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. During 2017, each of our named executive officers participated in our Senior Executive Cash Incentive Bonus Plan ("Bonus Plan"). The 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. Bonuses are targeted at a percentage of 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 2017, the bonus targets as a percent of salary were 45% for Dr. Treco and 35% for Mr. Lubner and Dr. Farzaneh-Far.

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.

For 2017, 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 initiating a Phase 2 clinical program for our lead product candidate RA101495 SC for the treatment of paroxysmal nocturnal hemoglobinuria, or PNH,

[Table of Contents](#)

and reporting Phase 2 interim data for PNH as well as initiating a Phase 2 clinical trial for RA101495 SC for generalized myasthenia gravis, or gMG; the advancement of our other earlier stage complement-mediated discovery programs; the financing of our Company via a follow-on offering of shares of our common stock and other corporate initiatives. In evaluating management's performance in 2017, our compensation committee considered achievement levels against these goals. Based on these achievement levels, for 2017, we awarded bonuses to Dr. Treco, Mr. Lubner and Dr. Farzaneh-Far in the amounts of \$124,000, \$80,000 and \$90,000, respectively, which are set forth under the "Non-Equity Incentive Plan Compensation" column of the Summary Compensation Table below.

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.

In February 2017, pursuant to our 2016 Plan, we granted to Dr. Treco and Mr. Lubner options to purchase 225,000 and 112,500 shares of our common stock, respectively, which vest in 48 equal monthly installments following the grant date, subject to the executive's continued service to the Company on each applicable vesting date. We also granted to Dr. Farzaneh-Far an option to purchase 90,000 shares of our common stock, which vests as to 6/48ths of the shares underlying the option on July 31, 2017 and as to the remaining shares in 42 equal monthly installment thereafter, subject to Dr. Farzaneh-Far's continued service to the Company on each applicable vesting date.

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 2017, and have the amount of the reduction contributed to the 401(k) plan. 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, 2017 and December 31, 2016 by our named executive officers.

Name and Principal Position	Fiscal Year	Salary (\$)	Bonus (\$)	Option Awards \$(1)	Non-Equity Incentive Plan Compensation \$(2)	All Other Compensation \$(3)	Total (\$)
Douglas A. Treco, Ph.D. <i>President & Chief Executive Officer</i>	2017	440,000	—	2,533,523	124,000	7,014	3,104,537
	2016	400,000	—	664,766	188,000	2,000	1,254,766
David C. Lubner <i>Executive Vice President & Chief Financial Officer</i>	2017	365,000	—	1,266,761	80,000	7,808	1,719,569
	2016	342,046	—	510,311	156,000	2,000	1,010,357
Ramin Farzaneh-Far, M.D. <i>Chief Medical Officer</i>	2017	356,500	—	1,013,409	90,000	—	1,459,909
	2016	167,046	180,000(4)	774,351	60,000	—	1,181,397

- (1) Amounts reflect the grant date fair value of option awards granted in 2017 and 2016, calculated in accordance with ASC Topic 718. For information regarding assumptions underlying the valuation of equity awards, see Note 10 to our audited financial statements contained in our Annual Report on Form 10-K for the year ended December 31, 2017, 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.
- (2) Amounts reported for 2017 represent incentive bonuses paid in early 2018 pursuant to our Bonus Plan, determined based upon the achievement of company performance objectives related to product development and operations and individual performance for the year ended December 31, 2017.
- (3) Amount reflects 401(k) matching contributions.
- (4) 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.

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 in October 2016. Except as noted below, these employment agreements provide for "at will" employment and provided for initial base salary and target bonus and standard benefit plan participation, subject to the terms of the plans. In addition, the employment agreements provide for certain change in control and severance benefits, as described below.

Dr. Douglas Treco

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 he 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) full 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

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 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) full 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. Ramin Farzaneh-Far

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) full 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 2017

The following table provides information with respect to outstanding stock options held by each of our named executive officers as of December 31, 2017.

Name	Grant Date	Option Awards			
		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.	2/1/2017(1)	51,562	173,438	16.64	2/1/2027
	8/16/16(2)	54,761	109,524	5.60	8/16/26
	12/10/15(3)	190,414	190,417	2.87	12/10/25
David C. Lubner	2/1/2017(1)	25,781	86,719	16.64	2/1/2027
	8/16/16(4)	9,524	19,047	5.60	8/16/26
	2/29/16(5)	8,542	20,743	2.87	2/28/26
	2/29/16(6)	85,565	93,005	2.87	2/28/26
Ramin Farzaneh-Far, M.D.	2/1/2017(7)	20,625	69,375	16.64	2/1/2027
	8/16/16(8)	8,335	16,665	5.60	8/16/26
	8/16/16(9)	58,690	107,024	5.60	8/16/26

- (1) The shares underlying this stock option vest in 48 equal monthly installments following the grant date, subject to continued service through each applicable vesting date. This stock option is subject to accelerated vesting as described above under the headings "Employment Arrangements with Our Named Executive Officers—Dr. Douglas Treco" and "Employment Arrangements with Our Named Executive Officers—David Lubner."
- (2) The shares underlying this stock option vest in 48 equal installments at the end of each month beginning September 2016, subject to continued service through each applicable vesting date. 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 December 2015, subject to continued service through each applicable vesting date. 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 over four years beginning on August 16, 2016, at a rate of 2,976 shares on January 31, 2017 and in 43 equal monthly installments thereafter, subject to continued service through each applicable vesting date. 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 in 48 equal installments at the end of each month beginning November 2016, subject to continued service through each applicable vesting date. 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 years beginning on January 11, 2016, at a rate of 25% on January 11, 2017, 3,721 shares on February 28, 2017 and in 35 equal monthly installments thereafter, subject to continued service through each applicable vesting date. This stock option is subject to accelerated vesting as described above under the heading "Employment Arrangements with Our Named Executive Officers—David Lubner."

[Table of Contents](#)

- (7) The shares underlying this stock option vest over four years beginning on July 1, 2017, at a rate of 11,250 shares on July 31, 2017, and in 42 equal monthly installments thereafter, subject to continued service through each applicable vesting date. This stock option is subject to accelerated vesting as described above under the heading "Employment Arrangements with Our Named Executive Officers—Dr. Ramin Farzaneh-Far."
- (8) The shares underlying this stock option vest over four years beginning on August 16, 2016, at a rate of 5,731 shares on July 31, 2017 and in 37 equal monthly installments thereafter, subject to continued service through each applicable vesting date. This stock option is subject to accelerated vesting as described above under the heading "Employment Arrangements with Our Named Executive Officers—Dr. Ramin Farzaneh-Far."
- (9) The shares underlying this stock option vest over four 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, subject to continued service through each applicable vesting date. This stock option is subject to accelerated vesting as described above under the heading "Employment Arrangements with Our Named Executive Officers—Dr. Ramin Farzaneh-Far."

Compensation Committee Interlocks and Insider Participation

During 2017, 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 2017, 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.

CERTAIN RELATIONSHIPS AND TRANSACTIONS

Relationships and Transactions with Directors, Executive Officers and Significant Stockholders

The following are certain transactions, arrangements and relationships with our directors, executive officers and stockholders owning 5% or more of our outstanding common stock.

Underwritten Public Offering. In February 2018, we sold an aggregate of 9,660,000 shares of our common stock at a purchase price of \$6.00 per share in an underwritten public offering. The following table summarizes purchases of our common stock by related persons:

Name	Shares of Common Stock	Total Purchase Price
New Enterprise Associates 13, L.P.(1)	2,000,000	\$ 12,000,000.00
RA Capital Healthcare Fund, L.P. and affiliates(2)	2,500,000	\$ 15,000,000.00

- (1) 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.
- (2) 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 in June 2016, 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.

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 any transaction, arrangement or relationship, or any series of similar transactions, arrangements or relationships, between us and any directors, executive officers, director nominees, holders of 5% or more of our capital stock and their affiliates or their immediate family members, 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. Under the policy, the Company maintains a list of all related persons and their affiliates, which is updated annually, to assist the Company in identifying related person transactions. Our audit committee is responsible for reviewing 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.

ANNUAL REPORT ON FORM 10-K

A copy of our annual report on Form 10-K for the fiscal year ended December 31, 2017, including financial statements and schedules thereto but not including exhibits, as filed with the SEC, will be sent to any stockholder of record on April 30, 2018 without charge upon written request to our Corporate Secretary addressed to: Ra Pharmaceuticals, Inc., 87 Cambridge Park Drive, Cambridge, MA 02140. A reasonable fee will be charged for copies of exhibits.

ADDITIONAL INFORMATION

Procedures for Submitting Stockholder Proposals for the 2019 Annual Meeting of Stockholders

Requirements for Stockholder Proposals or Nominations to be Brought Before the Annual Meeting. Stockholders intending to present a proposal or nomination at the 2019 annual meeting of stockholders (the "2019 annual meeting") must comply with the requirements set forth in our bylaws. Our bylaws require, among other things, that 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. Therefore, we must receive notice of such a proposal or nomination for the 2019 annual meeting no earlier than the close of business on February 28, 2019 and no later than the close of business on March 30, 2019. The notice must contain the information required by the bylaws, a copy of which is available upon request to our Corporate Secretary. In the event the date of the 2019 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 the 2019 annual meeting or the 10th day following the day on which public announcement of the date of the 2019 annual meeting is first made. SEC rules permit management to vote proxies in its discretion in certain cases if the stockholder does not comply with this deadline, and in certain other cases notwithstanding the stockholder's compliance with this deadline.

These requirements may preclude stockholders from bringing matters before the stockholders at an annual or special meeting. We reserve the right to reject, rule out of order, or take other appropriate action with respect to any proposal that does not comply with these or other applicable requirements.

Requirements for Stockholder Proposals to be Considered for Inclusion in the Company's Proxy Materials for the 2019 Annual Meeting. 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 2019 annual meeting, all applicable requirements of Rule 14a-8 must be satisfied and we must receive such proposals no later than January 3, 2019. 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

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.

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

E47481-P02336

KEEP THIS PORTION FOR YOUR RECORDS
DETACH AND RETURN THIS PORTION ONLY

THIS PROXY CARD IS VALID ONLY WHEN SIGNED AND DATED.

Ra Pharmaceuticals, Inc.

The Board of Directors recommends you vote FOR the following:

1. Election of two Class II Directors:

Nominees:

- 01) Robert Heft, Ph.D.
02) Rajeev Shah

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.

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

For Against Abstain

2. To ratify the appointment of Deloitte & Touche LLP as our independent registered public accounting firm for the fiscal year ending December 31, 2018.

☐ ☐ ☐

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

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.

Signature [PLEASE SIGN WITHIN BOX]

Date

Signature (Joint Owners)

Date

Important Notice Regarding the Availability of Proxy Materials for the Annual Meeting:
The Notice and Proxy Statement and Annual Report are available at www.proxyvote.com.

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**Ra Pharmaceuticals, Inc.
Annual Meeting of Stockholders
June 28, 2018 9:00 AM EDT
This proxy is solicited by the Board of Directors**

The undersigned stockholder(s) hereby appoint(s) Douglas A. Treco and David C. Lubner, or either of them, as proxies, each with the power to appoint his substitute, and hereby authorize(s) them to represent and to vote, as designated on the reverse side of this proxy card, all of the shares of common stock of Ra Pharmaceuticals, Inc. that the undersigned stockholder(s) is/are entitled to vote at the Annual Meeting of Stockholders to be held at 9:00 AM EDT on June 28, 2018, at the offices of Latham & Watkins LLP, 200 Clarendon Street Boston, MA 02116, and any continuation, adjournment or postponement thereof (the "Annual Meeting").

Such proxies are authorized to vote in their discretion (x) for the election of any person to the Board of Directors if any nominee named herein becomes unable to serve or for good cause will not serve, (y) on any matter that the Board of Directors did not know would be presented at the Annual Meeting by a reasonable time before the proxy solicitation was made, and (z) on such other business as may properly be brought before the Annual Meeting or any adjournment, continuation 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

