

Dicerna Pharmaceuticals Inc
Form DEF 14A
April 29, 2019

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 Pursuant to §240.14a-12

Dicerna 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:
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- (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:

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DICERNA PHARMACEUTICALS, INC.
87 Cambridgepark Drive, Cambridge, MA 02140
NOTICE OF ANNUAL MEETING OF STOCKHOLDERS
TO BE HELD ON JUNE 20, 2019
AT 8:30 A.M. EASTERN TIME

Dear Stockholder:

You are cordially invited to attend the 2019 Annual Meeting of Stockholders of Dicerna Pharmaceuticals, Inc., a Delaware corporation. The 2019 Annual Meeting of Stockholders will be held on June 20, 2019, at 8:30 a.m., Eastern Time, at Dicerna Pharmaceuticals, Inc.'s corporate offices, located at 87 Cambridgepark Drive, Cambridge, MA 02140, for the following purposes:

1. To elect 10 directors in the accompanying proxy statement with terms to expire at the 2020 Annual Meeting of Stockholders;
2. To ratify the selection of Deloitte & Touche LLP as our independent registered public accounting firm for the fiscal year ending December 31, 2019; and
3. To conduct any other business properly brought before the 2019 Annual Meeting of Stockholders.

A Notice of Internet Availability of Proxy Materials will be mailed to stockholders of record and beneficial owners as of the close of business on April 22, 2019. Only stockholders of record at the close of business on that date are entitled to notice of, and to vote at, the 2019 Annual Meeting of Stockholders or any adjournment thereof. On the date of mailing of the Notice of Internet Availability of Proxy Materials, the proxy materials will be accessible on a website referred to in the Notice of Internet Availability of Proxy Materials. These proxy materials will more fully describe the items of business above and will be available free of charge.

Your vote is very important. Whether or not you attend the 2019 Annual Meeting of Stockholders in person, it is important that your shares be represented. You may vote your proxy on the Internet, by phone or by mail in accordance with the instructions in the Notice of Availability of Proxy Materials.

On behalf of the board of directors, thank you for your participation in this important annual process.

By Order of the Board of Directors

/s/ Douglas M. Fambrough, III, Ph.D.
Douglas M. Fambrough, III, Ph.D.
President and Chief Executive Officer
Cambridge, Massachusetts
April 26, 2019

You are cordially invited to attend the annual meeting in person. Whether or not you expect to attend the annual meeting, please vote on the Internet, by phone or by mail as instructed in the notice of availability of proxy materials, as promptly as possible in order to ensure your representation at the meeting. Even if you have voted by proxy, you may still vote in person if you attend the annual meeting. Please note, however, that if your shares are held of record by a broker, bank or other nominee and you wish to vote at the annual meeting, you must obtain a proxy issued in your name from that record holder.

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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NOTICE OF ANNUAL MEETING OF STOCKHOLDERS
TO BE HELD ON JUNE 20, 2019
AT 8:30 A.M. EASTERN TIME

QUESTIONS AND ANSWERS ABOUT THESE PROXY MATERIALS AND VOTING PROCEDURES
WHY AM I RECEIVING THESE MATERIALS?

We sent you a Notice of Availability of Proxy Materials (the “notice”) because the board of directors of Dicerna Pharmaceuticals, Inc. is soliciting your proxy to vote at our 2019 Annual Meeting of Stockholders to be held on June 20, 2019, at 8:30 a.m., Eastern Time, at Dicerna Pharmaceuticals, Inc.’s corporate offices, located at 87 Cambridgepark Drive, Cambridge, MA 02140 (the “annual meeting”). We invite you to attend the annual meeting to vote on the proposals described in this proxy statement. However, you do not need to attend the meeting to vote your shares. Instead, you may vote by proxy over the Internet or by phone by following the instructions provided in the notice or, if you request printed copies of the proxy materials by mail, you may vote by mail.

The notice is being sent or made available on or about April 30, 2019 to all stockholders of record entitled to vote at the annual meeting.

As used in this proxy statement, “Dicerna,” the “Company,” “we” or “us” refer to Dicerna Pharmaceuticals, Inc., a Delaware corporation and, where appropriate, its consolidated subsidiaries.

WHO CAN VOTE AT THE ANNUAL MEETING?

Only stockholders of record at the close of business on April 22, 2019 will be entitled to vote at the annual meeting. On this record date, there were 68,323,979 shares of common stock outstanding that will be entitled to vote.

Stockholder of Record: Shares Registered in Your Name

If, on April 22, 2019, your shares were registered directly in your name with our transfer agent, American Stock Transfer & Trust Company, LLC, then you are a stockholder of record. The notice will be sent to you by mail directly by us. As a stockholder of record, you may vote in person at the annual meeting or vote by proxy. Whether or not you plan to attend the annual meeting, we urge you to vote on the Internet or by phone as instructed in the notice or by proxy by mail by requesting a paper copy of the proxy materials as instructed in the notice to ensure your vote is counted.

Beneficial Owner: Shares Registered in the Name of a Broker, Bank or Other Agent

If, on April 22, 2019, your shares were held in an account at a brokerage firm, bank or other agent, then you are the beneficial owner of shares held in “street name” and the notice is being forwarded to you by that organization. The organization holding your account is considered the stockholder of record for purposes of voting at the annual meeting. As a beneficial owner, you have the right to direct your broker, bank or other agent on how to vote the shares in your account. Your brokerage firm, bank or other agent will not be able to vote in the election of directors unless they have your voting instructions, so it is very important that you indicate your voting instructions to the institution holding your shares.

You are also invited to attend the annual meeting. However, since you are not the stockholder of record, you may not vote your shares in person at the annual meeting unless you request and obtain a valid proxy from your broker, bank or other agent.

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WHAT AM I VOTING ON?

There are two matters scheduled for a vote:

• Proposal 1: To elect 10 directors named in the proxy statement with terms to expire at the 2020 Annual Meeting of Stockholders; and

• Proposal 2: To ratify the selection of Deloitte & Touche LLP as our independent registered public accounting firm for our fiscal year ending December 31, 2019.

WHAT IS THE DICERNA BOARD'S VOTING RECOMMENDATION?

Our board of directors recommends that you vote your shares:

•“For” the election of all 10 director nominees; and

•“For” the ratification of the selection of Deloitte & Touche LLP as our independent registered public accounting firm for our fiscal year ending December 31, 2019.

WILL OTHER MATTERS BE VOTED ON AT THE ANNUAL MEETING?

Aside from the election of directors and the ratification of the selection of our independent registered public accounting firm, our board of directors knows of no matters to be presented at the annual meeting. If any other matter is properly brought before the annual meeting, shares represented by all proxies received by our board of directors will be voted with respect thereto in accordance with the judgment of the persons appointed as proxies.

HOW ARE PROXY MATERIALS DISTRIBUTED?

Under rules adopted by the Securities and Exchange Commission (the “SEC”), we are sending the notice to our stockholders of record and beneficial owners as of April 22, 2019. Stockholders will have the ability to access the proxy materials, including this proxy statement and our Annual Report on Form 10-K for the fiscal year ended December 31, 2018 on the Internet at www.proxyvote.com or to request a printed or electronic set of the proxy materials at no charge. Instructions on how to access the proxy materials over the Internet and how to request a printed copy may be found on the notice.

In addition, any stockholder may request to receive proxy materials in printed form by mail or electronically by email on an ongoing basis. Choosing to receive future proxy materials by email will save us the cost of printing and mailing documents to stockholders and will reduce the impact of annual meetings on the environment. A stockholder who chooses to receive future proxy materials by email will receive an email prior to next year's annual meeting with instructions containing a link to those materials and a link to the proxy voting website. A stockholder's election to receive proxy materials by email will remain in effect until the stockholder terminates it.

HOW DO I VOTE?

You may vote “For” or “Against” or abstain from voting with respect to each nominee to the board of directors. For Proposal 2, you may vote “For” or “Against” or abstain from voting. The procedures for voting are:

Stockholder of Record: Shares Registered in Your Name

If you are a stockholder of record as of April 22, 2019, you may vote in person at the annual meeting, vote by proxy over the Internet or by phone by following the instructions provided in the notice or, if you request printed copies of the proxy materials by mail, you may vote by mail. If your proxy is properly executed in time to be voted at the annual meeting, the shares represented by the proxy will be voted in accordance with the instructions you provide. Whether or not you plan to attend the annual meeting, we urge you to vote by proxy to ensure your vote is counted. You may still attend the annual meeting and vote in person if you have already voted by proxy.

1. To vote in person, come to the annual meeting and we will give you a ballot when you arrive.

2. To vote on the Internet, go to www.proxyvote.com to complete an electronic proxy card. You will be asked to provide the 12-digit control number from the notice and follow the instructions. Your vote must be received by 11:59 p.m., Eastern Time, on June 19, 2019 to be counted.

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To vote by phone, request a paper or email copy of the proxy materials by following the instructions on the notice
3. and call the number provided with the proxy materials to transmit your voting instructions. Your vote must be received by 11:59 p.m., Eastern Time, on June 19, 2019 to be counted.

To vote by mail, request a paper copy of the proxy materials by following the instructions on the notice and
4. complete, sign and date the proxy card enclosed with the paper copy of the proxy materials and return it promptly in the envelope provided. If you return your signed proxy card to us before the annual meeting, we will vote your shares as you direct.

Beneficial Owner: Shares Registered in the Name of a Broker, Bank or Other Agent

If you are a beneficial owner of shares registered in the name of your broker, bank or other agent, you should have received a notice and voting instructions from that organization rather than from us. Simply follow the instructions to ensure that your vote is counted. To vote in person at the annual meeting, you must obtain a valid proxy from your broker, bank or other agent. Follow the instructions from your broker, bank or other agent included with the notice, or contact your broker, bank or other agent.

We provide Internet proxy voting to allow you to vote your shares online, with procedures designed to ensure the authenticity and correctness of your proxy vote instructions. However, please be aware that you must bear any costs associated with your Internet access, such as usage charges from Internet access providers and telephone companies.

HOW MANY VOTES DO I HAVE?

On each matter to be voted upon, you have one vote for each share of common stock you owned as of the close of business on April 22, 2019.

WHAT IS THE QUORUM REQUIREMENT?

A quorum of stockholders is necessary to take any action at the meeting, other than to adjourn the meeting. The presence, in person or by proxy duly authorized, of the holders of a majority of the outstanding shares of stock entitled to vote will constitute a quorum. On April 22, 2019, there were 68,323,979 shares of common stock outstanding and entitled to vote.

Your shares will be counted towards the quorum only if you submit a valid proxy or vote in person at the annual meeting. Abstentions and broker non-votes will be counted towards the quorum requirement. If there is no quorum, the chairperson of the annual meeting or a majority of the votes present at the annual meeting may adjourn the annual meeting to another date.

WHAT IF I RETURN A PROXY CARD BUT DO NOT MAKE SPECIFIC CHOICES?

If you are a stockholder of record and you return a proxy card without marking any voting selections, your shares will be voted:

1. Proposal 1: "For" election of all 10 nominees for director; and
2. Proposal 2: "For" the ratification of the audit committee's selection of Deloitte & Touche LLP as our independent registered public accounting firm for our fiscal year ending December 31, 2019.

If any other matter is properly presented at the meeting, your proxy (one of the individuals named on your proxy card) will vote your shares using that proxy's best judgment.

If you are a beneficial owner of shares registered in the name of your broker, bank or other agent, your shares are held by your broker, bank or other agent as your nominee, or in "street name," and you will need to obtain a proxy form from the organization that holds your shares and follow the instructions included on that form regarding how to instruct the organization to vote your shares. If you do not give instructions to your broker, bank or other agent, it can vote your shares with respect to "discretionary" items but not with respect to "non-discretionary" items. Discretionary items are proposals considered routine under the rules of various national securities exchanges, and, in the absence of your voting instructions, your broker, bank or other agent may vote your shares held in street name on such proposals. Non-discretionary items are proposals considered non-routine under the rules of various national securities exchanges, and, in the absence of your voting instructions, your broker, bank or other agent may not vote your shares held in street name on such proposals and the shares will be treated as broker non-votes. Proposal 1 is considered a non-routine matter under the applicable rules. If you do not give your broker specific instructions, the broker may not vote your shares on Proposal 1 and therefore there may be broker non-votes on Proposal 1. Proposal 2 involves a matter we believe to be routine and thus if you do not give instructions to your broker, the broker may vote your

shares in its discretion on Proposal 2 and therefore no broker non-votes are expected to exist in connection with Proposal 2.

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HOW ARE VOTES COUNTED?

Votes will be counted by the inspector of election appointed for the annual meeting, who will count, with respect to Proposals 1 and 2, “For” votes, “Against” votes and abstentions, and with respect to Proposal 1, broker non-votes.

WHO WILL SERVE AS INSPECTOR OF ELECTIONS?

A representative of Broadridge Financial Solutions, Inc. will serve as the inspector of elections.

HOW MANY VOTES ARE NEEDED TO APPROVE EACH PROPOSAL?

For Proposal 1 electing 10 members of the board of directors, each director must receive a “For” vote from a majority of the votes cast at the annual meeting and entitled to vote on the election of such director. A majority of votes cast shall mean that the number of shares voted “For” a director’s election exceeds fifty percent of the number of votes cast with respect to that director’s election, with votes cast including votes “Against” in each case and excluding abstentions and broker non-votes with respect to that director’s election.

For Proposal 2 ratifying the audit committee’s selection of Deloitte & Touche LLP as our independent registered public accounting firm for our fiscal year ending December 31, 2019, the proposal must receive a “For” vote from the majority of the votes cast either in person or by proxy, with votes cast including votes “Against” and excluding abstentions.

WHO IS PAYING FOR THIS PROXY SOLICITATION?

We will pay for the entire cost of soliciting proxies. In addition to the notice and the proxy materials, our directors and employees may also solicit proxies in person, by telephone or by other means of communication. We will not pay our directors and employees any additional compensation for soliciting proxies. We may also reimburse brokerage firms, banks and other agents for the cost of forwarding the notice and any other proxy materials to beneficial owners.

WHAT DOES IT MEAN IF I RECEIVE MORE THAN ONE NOTICE?

If you receive more than one notice, your shares are registered in more than one name or are registered in different accounts. Please vote by proxy according to each notice to ensure that all of your shares are voted.

CAN I CHANGE MY VOTE AFTER SUBMITTING MY PROXY?

Yes, you can revoke your proxy at any time before the final vote at the annual meeting. If you are a stockholder of record, you may revoke your proxy in any one of three ways:

1. A duly executed proxy card with a later date or time than the previously submitted proxy;
2. A written notice that you are revoking your proxy to our Secretary, care of Dicerna Pharmaceuticals, Inc., at 87 Cambridgepark Drive, Cambridge, Massachusetts 02140; or
3. A later-dated vote on the Internet or by phone or a ballot cast in person at the annual meeting (simply attending the annual meeting will not, by itself, revoke your proxy).

If you are a beneficial owner, you may revoke your proxy by submitting new instructions to your broker, bank or other agent, or if you have received a proxy from your broker, bank or other agent giving you the right to vote your shares at the annual meeting, by attending the meeting and voting in person.

WHEN ARE STOCKHOLDER PROPOSALS DUE FOR NEXT YEAR’S ANNUAL MEETING?

Pursuant to Rule 14a-8 under the Securities Exchange Act of 1934, as amended (the “Exchange Act”), some stockholder proposals may be eligible for inclusion in our 2020 proxy statement. Any such proposal must be submitted in writing by January 1, 2020, to our Secretary, care of Dicerna Pharmaceuticals, Inc., at 87 Cambridgepark Drive, Cambridge, Massachusetts 02140. If we change the date of our 2020 annual meeting by more than thirty days from the date of the previous year’s annual meeting, the deadline shall be a reasonable time before we begin to print and send our proxy materials. Stockholders interested in submitting such a proposal are advised to contact knowledgeable counsel with regard to the detailed requirements of the applicable securities laws and our bylaws. The submission of a stockholder proposal does not guarantee that it will be included in our proxy statement.

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Our bylaws also establish an advance notice procedure for stockholders who wish to present a proposal before an annual meeting of stockholders but do not intend for the proposal to be included in our proxy statement. Our bylaws provide that if you wish to submit a proposal that is not to be included in next year's proxy statement or nominate a director, a timely written notice of a stockholder proposal must be delivered to, or mailed and received by, our Secretary, care of Dicerna Pharmaceuticals, Inc., at 87 Cambridgepark Drive, Cambridge, Massachusetts 02140, no earlier than February 21, 2020 and no later than the close of business on March 20, 2020, which notice must contain the information specified in our bylaws. If we change the date of our 2020 Annual Meeting of Stockholders by more than thirty days before, or more than sixty days after, the one-year anniversary of the 2019 Annual Meeting of Stockholders, then the written notice of a stockholder proposal that is not intended to be included in our proxy statement must be delivered, or mailed and received, not later than the ninetieth day prior to our 2020 Annual Meeting of Stockholders or, if later, the tenth day following the day on which certain public disclosure as described in our bylaws of the meeting date is made. The public announcement of an adjournment or postponement of the 2020 annual meeting does not commence a new time period (or extend any time period) for the giving of a stockholder's notice as described in this proxy statement. You are advised to review our bylaws, which contain additional requirements with respect to advance notice of stockholder proposals and director nominees.

WHAT IS "HOUSEHOLDING" AND HOW DOES IT AFFECT ME?

We have adopted a procedure approved by the SEC called "householding." Under this procedure, stockholders who have the same address may receive only one copy of the notice, unless one or more of these stockholders notifies us that they wish to receive individual copies of the notice and, if requested, other proxy materials. This process potentially means extra convenience for stockholders and cost savings for companies.

If you are a beneficial owner of our common stock, once you receive notice from your broker, bank or other agent that they will be householding communications to your address, householding will continue until you are notified otherwise or until you revoke your consent. If, at any time, you no longer wish to participate in householding and would prefer to receive separate notices or other proxy materials, please notify your broker, bank or other agent, direct your written request to Dicerna Pharmaceuticals, Inc., Secretary, at 87 Cambridgepark Drive, Cambridge, Massachusetts 02140 or contact our Secretary at (617) 621-8097. Stockholders who currently receive multiple copies of the notice or other proxy materials at their address and would like to request householding of their communications should contact their broker, bank or other agent.

HOW CAN I FIND OUT THE RESULTS OF THE VOTING AT THE ANNUAL MEETING?

Preliminary voting results will be announced at the annual meeting. Final voting results will be published in a Current Report on Form 8-K filed with the SEC within four business days following the annual meeting. If final voting results are not available to us within four business days following the annual meeting, we will file a Current Report on Form 8-K to publish preliminary results and will file an additional Current Report on Form 8-K to publish the final voting results within four business days of such final voting results being made available to us.

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PROPOSAL 1

ELECTION OF DIRECTORS

Our board of directors currently consists of 10 directors. All of our current directors have been nominated for reelection at the annual meeting. Any vacancies on our board of directors resulting from death, resignation, disqualification, removal or other causes, and any newly created directorships resulting from any increase in the number of directors, shall be filled by the affirmative vote of a majority of the directors then in office, even though less than a quorum of the board of directors. Any director elected to fill a vacancy shall hold office for the remainder of the unexpired term in which the vacancy occurred or newly created directorship was created and until such director's successor shall have been elected and qualified.

Directors are elected by a majority of the votes cast at the annual meeting and entitled to vote on the election of directors. A majority of votes cast shall mean that the number of shares voted "For" a director's election exceeds fifty percent of the number of votes cast with respect to that director's election, with votes cast including votes "Against" in each case and excluding abstentions and broker non-votes with respect to that director's election. Shares represented by executed proxies will be voted for the election of the 10 nominees named below, unless the "Against" or "Abstain" voting selection has been marked on the proxy card.

If any nominee becomes unavailable for election as a result of an unexpected occurrence, shares that would otherwise be voted for such nominee will be voted for the election of a substitute nominee proposed by the nominating and corporate governance committee and nominated by the board of directors. Each person nominated for election has agreed to serve if elected. Our management has no reason to believe that any nominee will be unable to serve. If elected at the annual meeting, each of the nominees will serve until the 2020 Annual Meeting of Stockholders and until such individual's successor is elected and qualified or, if sooner, until such individual's death, resignation or removal.

The following is a brief biography of each nominee for director and a discussion of the specific experience, qualifications, attributes or skills for each nominee that led the nominating and corporate governance committee of the board of directors to recommend that person as a nominee for director, as of the date of this proxy statement.

Name	Position	Age
Douglas M. Fambrough, III, Ph.D.	President, Chief Executive Officer and Director	50
J. Kevin Buchi	Chairman	63
Martin Freed, M.D.	Director	58
Stephen J. Hoffman, M.D., Ph.D.	Director	65
Peter Kolchinsky, Ph.D.	Director	42
Adam M. Koppel, M.D., Ph.D.	Director	49
Dennis H. Langer, M.D., J.D.	Director	67
Cynthia Smith	Director	50
Marc Kozin	Director	57
Anna Protopapas	Director	54

Douglas M. Fambrough, III, Ph.D.

Douglas M. Fambrough, III, Ph.D. has served as a member of our board of directors since April 2007 and as our president and chief executive officer since May 2010. From 2000 to May 2010, Dr. Fambrough held various positions at Oxford Bioscience Partners, a life science venture capital firm, most recently as a general partner. During his years at Oxford Bioscience Partners, he specialized in financing innovative life science technology companies, including the Company, Sirna Therapeutics, Inc. (acquired by Merck & Co., Inc.), Solexa, Inc. (acquired by Illumina, Inc.), and Xencor, Inc. (NASDAQ: XNCR), and served as a director of each of these companies. Dr. Fambrough has also served as a Trustee of Boston Biomedical Research Institute, a not-for-profit organization. Before joining Oxford Bioscience Partners, he was a genomic scientist at the Whitehead/MIT Center for Genome Research (now known as the Broad Institute). Dr. Fambrough graduated from Cornell University and obtained his Ph.D. in genetics at the University of California, Berkeley. The nominating and corporate governance committee believes that Dr. Fambrough's experience serving as our president and chief executive officer and as a member of our board of directors, combined with his experience in the venture capital industry and biotechnology research and development, provide him with the

qualifications and skills to serve as a member of our board of directors.

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J. Kevin Buchi

J. Kevin Buchi has served as a member of our board of directors since August 2018 and was appointed chairman of our board in January 2019. Mr. Buchi served as Impax Laboratories, LLC's interim president and chief executive officer from December 2016 until March 2017 and as member of the Impax board from November 2016 until the completion of the combination of Impax and Amneal Pharmaceuticals (NYSE: AMRX). Mr. Buchi served as president and chief executive officer of TetraLogic Pharmaceuticals (formerly NASDAQ: TLOG) from August 2013 to December 2016. Before TetraLogic, he served as corporate vice president of Global Branded Products at Teva Pharmaceutical Industries Limited (NYSE: TEVA) from 2011 to May 2012. Mr. Buchi was chief executive officer of Cephalon, Inc. (formerly NASDAQ: CEPH), which was acquired by Teva Pharmaceutical Industries Limited in October 2011. In addition, Mr. Buchi currently serves as a director of Amneal Pharmaceuticals Inc. (NYSE: AMRX) and Benitec Biopharma Ltd. (NASDAQ: BNTC). Mr. Buchi has previously served on the board of EPIRUS Biopharmaceuticals, Inc. (formerly NASDAQ: EPRS) from June 2013 to July 2016, Alexza Pharmaceuticals, Inc. (formerly NASDAQ: ALXA) from January 2013 to June 2016, Forward Pharma A/S (NASDAQ: FWP) from December 2012 to May 2016, and Stemline Therapeutics, Inc. (NASDAQ: STML) from March 2012 to May 2016. Mr. Buchi received his B.A. degree in Chemistry from Cornell University and a Masters of Management degree from the J.L. Kellogg Graduate School of Management, Northwestern University. The nominating and corporate governance committee believes that Mr. Buchi's scientific and business expertise, including his diversified background as an executive officer and director in biopharmaceutical companies, provide him with the qualifications and skills to serve as a member of our board of directors.

Martin Freed, M.D.

Martin Freed, M.D. has served as a member of our board of directors since June 2016. Dr. Freed has served as an independent consultant to several private pharmaceutical, biotechnology, and healthcare companies, specializing in clinical and general pharmaceutical development and clinical and regulatory strategy since February 2015. He co-founded and served as chief medical officer of Civitas Therapeutics, Inc., from December 2010 to October 2014 (acquired by Acorda Therapeutics, Inc. ("Acorda")), and as senior vice president, clinical development of Acorda from October 2014 through January 2015. In addition, Dr. Freed has served as chief medical officer and has provided strategic and operational planning and execution, as well as medical leadership for clinical pharmacology and development strategy and preclinical development for multiple pharmaceutical companies throughout his career. These companies include Avila Therapeutics, Inc., Taligen Therapeutics, Adnexus Therapeutics, Inc. (acquired by Bristol-Myers Squibb), and Vitae Pharmaceuticals, Inc. Dr. Freed spent nearly 14 years at GlaxoSmithKline and its predecessor, SmithKline Beecham Pharmaceuticals or SmithKline Beecham, where he served numerous roles including vice president, clinical development and medical affairs in the metabolism therapeutic area. Dr. Freed currently serves as an independent director for Solid Biosciences Inc. and Sojournix, Inc., and previously served as an independent director of InteKrin Therapeutics Inc. from 2007 to 2010. He has authored over 100 publications or presentations. Dr. Freed has been Board Certified in Internal Medicine, Nephrology and Clinical Pharmacology. He performed his internal medicine residency at Temple University Hospital and nephrology fellowship at Yale-New Haven Hospital. A Fellow of the American College of Physicians, Dr. Freed received his B.S. with distinction in Biology from the University of Delaware and M.D. from Pennsylvania State University's College of Medicine. The nominating and corporate governance committee believes that Dr. Freed's scientific and business experience, including his diversified background as an executive officer and director of a number of pharmaceutical companies, provide him with the qualifications and skills to serve as a member of our board of directors.

Stephen J. Hoffman, M.D., Ph.D.

Stephen J. Hoffman, M.D., Ph.D. has served as a member of our board of directors since November 2007. Dr. Hoffman has been chief executive officer and director of Aerpio Pharmaceuticals, Inc. (NASDAQ: ARPO) since December 2017. Prior to that, he served as a senior advisor to PDL BioPharma, Inc. from February 2014 until November 2017. Previously he was a managing director at Skyline Ventures, a venture capital firm, from May 2007 until February 2014. From January 2003 to March 2007, Dr. Hoffman was a general partner at TVM Capital, a venture capital firm. From 1994 to 2002, he served as president, chief executive officer and a member of the board of directors of Allos Therapeutics, Inc., a biopharmaceutical company, where he remained as chairman of the board until

it was acquired by Spectrum Pharmaceuticals, Inc. in September 2012. From 1990 to 1994, Dr. Hoffman completed a fellowship in clinical oncology and a residency/fellowship in dermatology, both at the University of Colorado. Dr. Hoffman was the scientific founder of Somatogen Inc., a biotechnology company that was acquired by Baxter International, Inc. in 1998, where he held the position of vice president of science and technology from 1987 until 1990. Dr. Hoffman currently serves on the board of directors of AcelRx Pharmaceuticals, Inc. (NASDAQ: ACRX), Aerpio Pharmaceuticals, Inc. (OTC US: ARPO), where he is also chief executive officer, and Palleon Pharmaceuticals Inc. Previously, Dr. Hoffman also served on the boards of directors of Genocera Biosciences, Inc. (NASDAQ: GNCA), which he resigned from effective April 11, 2017, and Sirtris Pharmaceuticals, Inc., a pharmaceutical company that was acquired by GlaxoSmithKline (NYSE: GSK) in 2008. Dr. Hoffman holds a Ph.D. in bio-organic chemistry from Northwestern University and an M.D. from the University of Colorado School of Medicine. The nominating and corporate governance committee believes that Dr. Hoffman's

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scientific and business experience, including his diversified background as an executive officer, director and venture capital investor in biopharmaceutical companies, provide him with the qualifications and skills to serve as a member of our board of directors.

Peter Kolchinsky, Ph.D.

Peter Kolchinsky, Ph.D. has served as a member of our board of directors since July 2013. Dr. Kolchinsky is a founding partner and portfolio manager at RA Capital, where he has been since September 2004. He is active in both public and private investments across the pharmaceutical, medical devices, diagnostics and life-science tools industries. Dr. Kolchinsky authored the e-book “The Entrepreneur’s Guide to a Biotech Startup”. Dr. Kolchinsky currently also serves as a member of the boards of directors of Lantos Technologies, Inc., Wave Life Sciences, Sojournix, Inc., and Enlight Bio Inc. In the past, Dr. Kolchinsky served on the Board of Global Science and Technology for the National Academies of Sciences. He received a Ph.D. in virology from Harvard University and a bachelor’s degree from Cornell University. The nominating and corporate governance committee believes that Dr. Kolchinsky’s experience as a venture capital investor in and director of a number of healthcare and life science companies provides him with the qualifications and skills to serve as a member of our board of directors.

Adam M. Koppel, M.D., Ph.D.

Adam M. Koppel, M.D., Ph.D. joined our board of directors in April 2017. Dr. Koppel rejoined Bain Capital in 2016 as a managing director of Bain Capital Life Sciences. He initially joined Bain Capital Public Equity in 2003 where he was a leader within the healthcare sector until mid-2014. During the period mid-2014 to mid-2016, Dr. Koppel worked at Biogen, Inc. (NASDAQ: BIIB) where he served as executive vice president of corporate development and chief strategy officer. Prior to joining Bain Capital in 2003, Dr. Koppel was an associate principal at McKinsey & Co in New Jersey where he served a variety of healthcare companies. Dr. Koppel received an M.D. and Ph.D. in neuroscience from the University of Pennsylvania School of Medicine. He also received an M.B.A. from The Wharton School at the University of Pennsylvania, where he was a Palmer Scholar. He graduated magna cum laude from Harvard University with an A.B. and A.M. in history and science. Dr. Koppel currently serves on the board of directors of Aptinyx Inc. (NASDAQ: APTX) and Solid Biosciences Inc. (NASDAQ: SLDB) and he previously served as a director of Trevena, Inc. (NASDAQ: TRVN) from September 2014 until October 2018 and PTC Therapeutics, Inc. from March 2013 until June 2017. The nominating and corporate governance committee believes that Dr. Koppel’s background as an executive officer, director and venture capital investor in biopharmaceutical companies, as well as his scientific and medical background, provide him with the qualifications and skills to serve as a member of our board of directors.

Dennis H. Langer, M.D., J.D.

Dennis H. Langer, M.D., J.D. has served as a member of our board of directors since November 2007. Dr. Langer previously served as the chairman of the board of directors and chief executive officer of AdvanDx, Inc., from January 2013 to August 2014. Dr. Langer has been a clinical professor in the department of psychiatry at Georgetown University School of Medicine since September 2003. From August 2005 to May 2010, Dr. Langer served as managing partner of Phoenix IP Ventures, LLC. From January 2004 to July 2005, he served as president, North America of Dr. Reddy’s Laboratories, Inc. (NYSE: RDY). From September 1994 until January 2004, Dr. Langer held several positions at GlaxoSmithKline plc (NYSE: GSK) and its predecessor, SmithKline Beecham, culminating with senior vice president of research and development. Dr. Langer currently serves on the board of directors of Myriad Genetics, Inc. (NASDAQ: MYGN) and Pernix Therapeutics Holdings, Inc. (NASDAQ: PTX). Dr. Langer previously served on the boards of directors of Auxilium Pharmaceuticals, Inc. (NASDAQ: AUXL), Cytogen Corporation (NASDAQ: CYTO) (acquired by EUSA Pharma, Inc.), Delcath Systems, Inc. (NASDAQ: DCTH), Myrexix, Inc. (NASDAQ: MYRX), Pharmacopeia, Inc. (NASDAQ: PCOP) (acquired by Ligand Pharmaceuticals Inc.) and Sirna Therapeutics, Inc. (NASDAQ: RNAI) (acquired by Merck & Co., Inc.). Dr. Langer received a J.D. (cum laude) from Harvard Law School, an M.D. from Georgetown University School of Medicine and a B.A. in biology from Columbia University. The nominating and corporate governance committee believes that Dr. Langer’s business and management experience, including senior positions at global pharmaceutical companies and innovative research and development experience at companies such as GlaxoSmithKline plc, Eli Lilly & Co. (NYSE: LLY), Abbott Laboratories (NYSE: ABT) and G.D. Searle & Company, as well as his diversified background serving as a director of several

pharmaceutical companies provide him with the qualifications and skills to serve as a member of our board of directors.

Marc Kozin

Marc Kozin has served as a member of our board of directors since January 2019. Mr. Kozin is a professional board member. Previously Mr. Kozin was a career strategy consultant, having served as president of L.E.K. Consulting's North

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American practice from 1997 until 2012 and as Senior Advisor from January 2012 to December 2018. Mr. Kozin serves on the boards of UFP Technologies, Inc. (NASDAQ: UFPT), HealthCare Royalty Partners, The Greenlight Fund, and Flex Pharma Inc. (NASDAQ: FLKS). Mr. Kozin previously served on the boards of CrunchTime! Information Systems, Inc. from 2002 to 2013, Dyax Corp. from January 2012 until January 2016, Frequency Therapeutics, Inc. from 2016 to 2018, OvaScience, Inc. from January 2014 until December 2018, and Endocyte, Inc. from July 2012 until their acquisition by Novartis International AG (NYSE: NVS) in December 2018. Mr. Kozin previously served on the board of DukeEngage from 2011 to 2017. Mr. Kozin received his B.A. with distinction, magna cum laude, in Economics from Duke University. He was also awarded an M.B.A. with distinction from The Wharton School, University of Pennsylvania. The nominating and corporate governance committee believes that Kozin's substantial experience serving as board member to biopharmaceutical companies, as well as his business background, provide him with the qualifications and skills to serve as a member of our board of directors.

Anna Protopapas

Anna Protopapas has served as a member of our board since January 2019. Ms. Protopapas is president and chief executive officer of Mersana Therapeutics, Inc. (NASDAQ: MRSN), a clinical stage antibody drug conjugate company, which she joined in March 2015. Prior to Mersana, Ms. Protopapas was president of Millennium Pharmaceuticals from April 2013 to October 2014, where she led Takeda Pharmaceutical Company Ltd (OTCMKTS: TKPHF)'s oncology business. Ms. Protopapas also served as the executive vice president of Global Business Development for Takeda Pharmaceuticals from October 2010 to October 2014, where she oversaw global acquisitions, partnering, licensing, and venture investing. Ms. Protopapas was a member of Takeda's executive committee and was elected a corporate officer in 2011. Earlier, Ms. Protopapas was an executive officer of Millennium Pharmaceuticals and served in various senior leadership positions. Ms. Protopapas served on the board of directors of Ariad Pharmaceuticals, Inc. from May 2015 to February 2017 when it was sold to Takeda and on the board of Bioverativ Inc. from January 2017 to January 2018 when it was sold to Sanofi S.A. (NASDAQ: SNY). She earned her bachelor's degree in science and engineering from Princeton University, a master's degree in chemical engineering practice from the Massachusetts Institute of Technology, and an M.B.A. from Stanford Graduate School of Business. The nominating and corporate governance committee believes that Ms. Protopapas' positions as chief executive officer and president of two leading pharmaceutical companies and her diversified experience in key roles in the pharmaceutical industry provide her with the qualifications and skills to serve as a member of our board of directors.

Cynthia Smith

Cynthia Smith has served as a member of our board of directors since August 2018. Ms. Smith most recently served as chief commercial officer and a member of the executive team of ZNS Pharma (NASDAQ: ZSPH), acquired by AstraZeneca (NYSE: AZN) in 2015 approximately \$2.7 billion, a position she held from June 2013 to December 2016. Prior to joining ZS Pharma, Ms. Smith served as vice president, market access and commercial development at Affymax, Inc. Ms. Smith was employed at Affymax from October 2008 to March 2013. She held various leadership positions at Merck (NYSE: MRK) from June 2000 to October 2008. She previously served on the board of Nivalis Therapeutics (NASDAQ: NVLS) from October 2016 to July 2017. The nominating and corporate governance committee believes that Ms. Smith's scientific and business experience, including her position as an executive officer of a biopharmaceutical company and key positions at a large global pharmaceutical company, provide her with the qualifications and skills to serve as a member of our board of directors.

THE BOARD OF DIRECTORS RECOMMENDS A VOTE "FOR" THE ELECTION OF EACH NAMED NOMINEE.

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PROPOSAL 2

RATIFICATION OF SELECTION OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

The audit committee of our board of directors has selected Deloitte & Touche LLP as our independent registered public accounting firm for the fiscal year ending December 31, 2019 and has further directed that management submit the selection of our independent registered public accounting firm for ratification by the stockholders at the annual meeting. Deloitte & Touche LLP has been engaged by us since May 2009 to audit our financial statements since our inception in October 2006. Representatives of Deloitte & Touche LLP are expected to be present at the annual meeting. They will have an opportunity to make a statement if they so desire and will be available to respond to appropriate questions.

Neither our bylaws nor other governing documents or law require stockholder ratification of the selection of Deloitte & Touche LLP as our independent registered public accounting firm. However, the audit committee is submitting the selection of Deloitte & Touche LLP to the stockholders for ratification as a matter of good corporate practice. If the stockholders fail to ratify the selection, the audit committee will reconsider whether or not to retain Deloitte & Touche LLP. Even if the selection is ratified, the audit committee, in its discretion, may direct the appointment of a different independent registered public accounting firm at any time during the year if the committee determines that such a change would be in our best interests and our stockholders' best interest.

The affirmative vote of the holders of a majority of the votes cast either in person or represented by proxy at the annual meeting will be required to ratify the selection of Deloitte & Touche LLP for our fiscal year ending December 31, 2019. Abstentions will not be counted as votes cast on this proposal. No broker non-votes are expected to exist in connection with this proposal.

THE BOARD OF DIRECTORS AND THE AUDIT COMMITTEE RECOMMENDS A VOTE "FOR" PROPOSAL 2.

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SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT

The following table sets forth certain information regarding the ownership of our common stock as of March 31, 2019, by: (i) each nominee for director; (ii) each of our named executive officers; (iii) all of our executive officers and directors as a group; and (iv) all those known by us to be beneficial owners of more than five percent of our common stock.

Beneficial Owner	Beneficial Ownership**	
	Number of Shares	Percent of Total
5% Stockholders:		
Bain Capital Life Science Investors, LLC ⁽¹⁾	8,930,237	13.08 %
RTW Investments, LP ⁽²⁾	5,907,088	8.65 %
Eli Lilly and Company ⁽³⁾	5,414,185	7.93 %
Bridger Management, LLC ⁽⁴⁾	4,773,718	6.99 %
BlackRock, Inc. ⁽⁵⁾	4,331,228	6.34 %
Named Executive Officers and Directors:		
Douglas M. Fambrough, III, Ph.D. ⁽⁶⁾	1,776,552	2.54 %
J. Kevin Buchi	—	*
Martin Freed ⁽⁷⁾	70,831	*
Stephen J. Hoffman, M.D., Ph.D. ⁽⁸⁾	117,916	*
Peter Kolchinsky, Ph.D. ⁽⁹⁾	2,574,585	3.76 %
Adam M. Koppel, M.D., Ph.D. ⁽¹⁰⁾	8,994,815	13.16 %
Marc Kozin ⁽¹¹⁾	5,000	*
Dennis H. Langer, M.D., J.D. ⁽¹²⁾	201,903	*
Anna Protopapas	—	*
Cynthia Smith	—	*
Bob D. Brown, Ph.D. ⁽¹³⁾	650,246	*
John B. Green ⁽¹⁴⁾	308,717	*
All executive officers and directors as a group (14 persons) ⁽¹⁵⁾	15,323,911	21.28 %

*Denotes ownership percentage less than one percent.

This table is based upon information supplied by officers, directors and principal stockholders and Forms 3, Forms 4 and Schedules 13D and 13G filed with the SEC. Unless otherwise indicated in the footnotes to this table, we believe that each of the stockholders named in the table has sole voting and dispositive power with respect to the shares indicated as beneficially owned. Applicable percentages are based on 68,288,906 shares outstanding on March 31, 2019, adjusted as required by rules promulgated by the SEC. Unless otherwise set forth below, the address of each beneficial owner is 87 Cambridgepark Drive, Cambridge, MA 02140.

- Based solely on the Schedule 13D/A No. 2 filed with the SEC on December 19, 2017 by Bain Capital Life Sciences Fund, L.P., a Cayman exempted limited partnership (“BC LS”), and BCIP Life Sciences Associates, LP, a Delaware limited partnership (“BCIP LS” and, together with BC LS, the “Bain Entities”). Consists of 8,077,899 shares of our common stock held by BC LS and 852,338 shares of our common stock held by BCIP LS. The governance,
- (1) investment strategy and decision-making process with respect to the investments held by all of the Bain Entities is directed by Bain Capital Life Sciences Investors, LLC (“BCI LS”), whose managers are Jeffrey Schwartz and Adam Koppel. As a result, each of BCI LS, Mr. Schwartz and Dr. Koppel may be deemed to share voting and dispositive power with respect to the securities held by the Bain Entities. The principal business address of each of the Bain Entities, BCI LS, Mr. Schwartz, and Dr. Koppel is 200 Clarendon Street, Boston, MA 02116.
- (2) Based solely on the Schedule 13G/A No. 4 filed with the SEC on February 14, 2019 by RTW Investments, LP, a Delaware limited partnership (“RTWI”), RTW Master Fund, Ltd., a company organized under the laws of the Cayman Islands (“RTW Fund”), and Roderick Wong. Consists of 5,907,088 shares of our common stock held by

RTW Fund and one or more other funds (together with RTW Fund, the “Funds”), which are managed by RTWI. RTWI, in its capacity as the investment manager of Funds and Roderick Wong as the Managing Partner of RTWI, shared voting and dispositive power with respect to 5,907,088 shares of our common stock, of which RTW Fund has shared voting and dispositive power with respect to 5,207,725 shares of our common stock. Each may be deemed to beneficially own such shares of our common stock. Each of RTWI, RTW Fund, and Roderick Wong disclaims beneficial ownership of the shares of common stock except to the extent of its or his pecuniary interest therein. The address of the principal place of business of RTWI and Roderick Wong is RTW Investments, L.P., 412 West 15th Street, Floor 9, New York, New York 10011. The address and principal place of RTW Fund is c/o Intertrust Corporate Services (Cayman) Limited, 190 Elgin Avenue, Georgetown, Grand Cayman KY1-9001, Cayman Islands.

(3) Based solely on the Schedule 13D filed with the SEC on December 20, 2018 by Eli Lilly and Company, an Indiana corporation (“Eli Lilly”). All 5,414,185 shares of our common stock held directly by Eli Lilly. Eli Lilly has the sole power to dispose or direct the disposition of, and the sole power to vote, all of such shares. The address of Eli Lilly is Lilly Corporate Center, Indianapolis, Indiana 46285.

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Based solely on the Schedule 13G/A filed with the SEC on February 14, 2019 by Bridger Management, LLC (“Bridger Management”) and Roberto Mignone. Swiftcurrent Partners, L.P. (“Swiftcurrent Partners”), Swiftcurrent Offshore Master, Ltd. (“Swiftcurrent Offshore”), and Bridger Healthcare, Ltd. (“Bridger Healthcare”) are the owners of record of the 4,773,718 shares of our common stock reported herein. Bridger Management is the investment (4) adviser to Swiftcurrent Partners, Swiftcurrent Offshore, and Bridger Healthcare. Mr. Mignone is the Manager of Bridger Management. Bridger Management and Mr. Mignone may be deemed to share beneficial ownership of shares of our common stock and Bridger Management and Mr. Mignone share voting and dispositive power with respect to such shares.

Based solely on the Schedule 13G filed on February 8, 2019 by BlackRock, Inc., (“BlackRock”) a parent holding company, which states that BlackRock and its affiliates have sole dispositive power over 4,331,228 shares of our (5) common stock and sole voting power over 4,236,768 shares of our common stock. All shares covered by such filing are held by BlackRock and/or its subsidiaries. The address is BlackRock, Inc. is 55 East 52nd Street, New York, NY 10055.

Consists of (a) 71,321 shares of our common stock, including shares acquired under the Company’s 2014 Employee Stock Purchase Plan (“ESPP”), (b) 1,305,231 shares of our common stock issuable upon exercise of stock options exercisable within 60 days of March 31, 2019, (c) 200,000 shares of common stock issuable upon exercise of stock options exercisable within 60 days of March 31, 2019 and held by an irrevocable trust for Dr. Fambrough’s minor (6) child A (“Child A Trust”) for which Dr. Fambrough’s spouse serves as trustee, and (d) 200,000 shares of common stock issuable upon exercise of stock options exercisable within 60 days of March 31, 2019 and held by an irrevocable trust for Dr. Fambrough’s minor child B (“Child B Trust”) for which Dr. Fambrough’s spouse serves as trustee. Dr. Fambrough disclaims beneficial ownership of the securities held by the Child A Trust and Child B Trust except to the extent of his proportionate pecuniary interest therein, if any.

(7) Consists of 70,831 shares of our common stock issuable upon exercise of stock options exercisable within 60 days of March 31, 2019.

(8) Consists of 117,916 shares of common stock issuable upon exercise of stock options within 60 days of March 31, 2019.

Consists of 2,158,681 shares of our common stock held by RA Capital Healthcare Fund, L.P. (the “RA Fund”), 297,988 shares of our common stock held by a separately managed account (the “Account”), and 117,916 shares of our common stock issuable upon exercise of options within 60 days of March 31, 2019. RA Capital Management, LLC (“RA Capital”) is the general partner of RA Fund and the investment adviser of the Account. Dr. Kolchinsky is the Managing Member of RA Capital. Each of RA Capital and Dr. Kolchinsky may be deemed to beneficially own the reported securities for purposes of Section 13(d) of the Exchange Act. RA Capital and Dr. Kolchinsky disclaim (9) beneficial ownership of the RA Fund reported securities for purposes of Rule 16a-1(a)(1) under the Exchange Act in reliance on Rule 16a-1(a)(1)(v) and (vii), respectively. RA Capital, Dr. Kolchinsky, and RA Fund have no pecuniary interest in the securities held by the Account and disclaim: (a) beneficial ownership of securities held in the Account for purposes of Rule 16a-1(a)(2) and (b) beneficial ownership of securities held by the Fund, for purposes of Rule 16a-1(a)(2), except to the extent of their pecuniary interest therein. The address of the principal place of business of RA Fund, RA Capital, and Peter Kolchinsky, Ph.D. is 20 Park Plaza, Suite 1200, Boston, MA 02116.

Consists of shares of our common stock beneficially owned by Bain Capital Life Sciences as described in footnote (1) above, and 64,578 shares of our common stock issuable upon exercise of stock options exercisable (10) within 60 days of March 31, 2019. Dr. Koppel serves as the managing director of Bain Capital Life Sciences and may be deemed to beneficially own shares beneficially owned by Bain Capital Life Sciences, except to the extent of his pecuniary interest therein.

(11) Consists of 5,000 shares of our common stock held by Marc D. Kozin Revocable Trust.

(12) Consists of (a) 47,978 shares of common stock held by Langer Family Holdings, LLLP, (b) 29,064 shares of common stock held by Dennis H. Langer, M.D., J.D., and (c) 124,861 shares of common stock issuable upon stock options exercisable within 60 days of March 31, 2019 held by Dr. Langer. Dr. Langer is a manager of Langer Family Investments, LLC, which is the general partner of Langer Family Holdings, LLLP. Dr. Langer

disclaims beneficial ownership of the shares owned by Langer Family Holdings, LLLP.

(13) Consists of (a) 9,670 shares of common stock and (b) 640,576 shares of common stock issuable upon exercise of options exercisable within 60 days of March 31, 2019.

(14) Consists of (a) 10,698 shares of common stock, including shares acquired under the Company's 2014 ESPP and (b) 298,019 shares of common stock issuable upon exercise of options exercisable within 60 days of March 31, 2019.

(15) Consists of (a) 11,587,781 shares of common stock held by our directors (and entities affiliated with certain of our directors) and executive officers and (b) 3,736,120 shares of common stock issuable upon exercise of stock options that are exercisable within 60 days of March 31, 2019 held by our directors and executive officers.

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Section 16(a) Beneficial Ownership Reporting Compliance

Section 16(a) of the Exchange Act requires “insiders,” including our executive officers, directors and beneficial owners of more than 10% of our common stock, to file reports of ownership and changes in ownership of our common stock with the SEC and The NASDAQ Stock Market LLC (“NASDAQ”), and to furnish us with copies of all Section 16(a) forms they file. Based solely on our review of the copies of such forms received by us, or written representations from reporting persons, we believe that our insiders complied with all applicable Section 16(a) filing requirements during the year ended December 31, 2018, except with respect to the Form 4 reporting of transactions of Bart W. Wise regarding his acquisition of Employee Stock Options on June 21, 2018, which was reported one day late on the Form 4 filed June 26, 2018 and Peter Kolchinsky regarding the disposition of common stock held indirectly, and through his role as sole manager of RA Capital Management, LLC, on December 29, 2017, which was reported one day late on the Form 4 filed January 3, 2018.

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CERTAIN RELATIONSHIPS AND RELATED PARTY TRANSACTIONS

Policies and Procedures for Related Party Transactions

We have adopted a written related party transactions policy which sets forth the policies and procedures for the review and approval or ratification of related party transactions. The policy covers, with certain exceptions set forth in Item 404 of Regulation S-K promulgated under the Exchange Act, any transaction, arrangement or relationship, or any series of similar transactions, arrangements or relationships, in which we were or are to be a participant, where the amount involved exceeds \$120,000 or one percent of the average of our total assets at year-end for the last two completed fiscal years and a related party had, has or will have a direct or indirect material interest, including indebtedness, guarantees of indebtedness and employment by us of a related party.

A related party transaction reviewed under the policy will be considered approved or ratified if it is authorized by the audit committee of our board of directors or the chairperson of the audit committee in accordance with the standards set forth in the policy after full disclosure of the related party's interests in the transaction. As appropriate for the circumstances, the audit committee or the chairperson of the audit committee, as applicable, shall review and consider:

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

Related Party Transactions

The following is a description of transactions or series of similar transactions during the fiscal years ended December 31, 2018 and 2017 to which we were a party or will be a party, in which (i) the amounts involved exceeded or will exceed \$120,000 or one percent of the average of our total assets at year-end for the last two completed fiscal years and (ii) any of our directors, executive officers, holders of more than five percent of our capital stock or any member of their immediate family had or will have a direct or indirect material interest, other than compensation arrangements with directors and executive officers, which are described where required in the sections titled "Director Compensation" and "Executive Compensation," respectively, in this proxy statement.

Private Placement

On April 11, 2017, we completed a private placement with certain institutional investors, pursuant to which we agreed to issue and sell 700,000 shares of our newly designated Redeemable Convertible Preferred Stock, par value \$0.0001 per share (the "Redeemable Convertible Preferred"), at a purchase price of \$100.00 per share, for total gross proceeds of \$70.0 million. Participants in the financing included funds affiliated with BCI LS, RTWI, RA Capital, Domain Partners, EcoR1 Capital and CAM, which are holders of more than five percent of our capital stock, and Skyline Venture Partners V, L.P. ("SVP"), which was, at the time of the private placement, a holder of more than five percent of our capital stock. BCI LS, Domain Partners, RA Capital and SVP are also entities affiliated with or formerly affiliated with four members of our board of directors, Dr. Koppel, managing director of BCI LS, Dr. Kolchinsky, managing member of RA Capital, Dr. Hoffman, formerly a managing member of SVP, and Brian Halak, manager of Domain Partners and formerly a member of our board of directors.

2017 Offering

On December 18, 2017, we completed an underwritten follow-on public offering of 5,714,286 shares of our common stock. BCI LS acquired 257,798 shares of our common stock and BCIP LS acquired 27,202 shares of our common stock in the offering. Dr. Koppel, a member of our board of directors, is a managing member of BCI LS.

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Conversion of Redeemable Convertible Preferred

On December 18, 2017, we completed the conversion of all of our outstanding shares of Redeemable Convertible Preferred into shares of our common stock (the “Conversion”) at the election of the holders of our Redeemable Convertible Preferred. Certain shares of our common stock were issued to the holders of our Redeemable Convertible Preferred as consideration for, among other things, their election to convert their outstanding shares of Redeemable Convertible Preferred and their agreement to waive and amend certain provisions of an amended and restated registration rights agreement by and among us and the Investors named therein. The aggregate number of shares of our common stock issued in connection with the Conversion, including the shares issued upon the conversion of our Redeemable Convertible Preferred and the additional shares issued as consideration was 24,206,663. The holders of our Redeemable Convertible Preferred who participated in the Conversion included funds affiliated with BCI LS, RTWI, RA Capital, Domain Partners, EcoR1 Capital and CAM, which are holders or more than five percent of our capital stock, and SVP, which was a holder of more than five percent of our capital stock at the time of the Conversion. BCI LS, Domain Partners, RA Capital and SVP are also entities affiliated with or formerly affiliated with four members of our board of directors, Dr. Koppel, managing director of BCI LS, Dr. Kolchinsky, managing member of RA Capital, Dr. Hoffman, formerly a managing member of SVP, and Brian Halak, manager of Domain Partners and formerly a member of our board of directors.

Indemnification of Directors and Officers

We have entered into indemnification agreements with each of our directors and executive officers. These agreements, among other things, require us or will require us to indemnify each director (and in certain cases their affiliated venture capital funds) and executive officer to the fullest extent permitted by Delaware law, including indemnification of expenses such as attorneys’ fees, judgments, fines and settlement amounts incurred by the director or executive officer in any action or proceeding, including any action or proceeding by or in right of us, arising out of the person’s services as a director or executive officer.

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BOARD OF DIRECTORS AND CORPORATE GOVERNANCE

Meetings of the Board of Directors

The board of directors met 10 times during the fiscal year ended December 31, 2018. Each member of the board of directors attended at least 75 percent of the aggregate number of meetings of our board of directors and of the committees on which such individual served, held during the period of the last fiscal year for which such individual was a director or committee member, respectively. Five of the current members of our board of directors attended our 2018 annual meeting of stockholders.

Corporate Governance Guidelines

The board of directors has documented our governance practices in our corporate governance guidelines to assure that the board will have the necessary authority and practices in place to review and evaluate our business operations as needed and to make decisions that are independent of our management. The guidelines are also intended to align the interests of directors and management with those of our stockholders. The corporate governance guidelines set forth certain practices the board will follow with respect to board composition, board committees, board nomination, director qualifications and evaluation of the board and committees. The corporate governance guidelines and the charter for each committee of the board of directors may be viewed at www.dicerna.com.

Board Leadership Structure

The positions of chief executive officer and chairman of the board of directors are currently held by Douglas M. Fambrough, III, Ph.D. and J. Kevin Buchi, respectively. The board of directors believes at this time having a separate chairman provides a more effective channel for the board of directors to express its views on management, by enhancing the board's oversight of, and independence from, management, and allows the chief executive officer to focus more on the strategy and operations of our company.

Risk Oversight

The board of directors monitors and assesses key business risks directly through deliberations of the board of directors and also by way of delegation of certain risk oversight functions to be performed by committees of the board of directors. The board of directors regularly reviews and assesses, among other matters, the following important areas that present both opportunities and risk to the Company's business:

- review and approval of the Company's annual operating and capital spending plan and review of management's updates as to the progress against the plan and any related risks and uncertainties;
- periodic consideration of the balance of risk and opportunities presented by the Company's medium to long-term strategic plan and the potential implications of success and failure in one or more of the Company's key drug development programs;
- regular consideration of the risks and uncertainties presented by alternative clinical development strategies;
- regular review of the progress and results of the Company's clinical development programs and early research efforts, including, without limitation, the strengths, weaknesses, opportunities and threats for these programs;
- periodic review and oversight of any material outstanding litigation or threatened litigation;
- review and approval of material collaboration partnerships for the further development and commercial exploitation of the Company's proprietary drug development programs and technologies;
- regular review and approval of the annual corporate goals and an assessment of the Company's level of achievement against these established goals;
- regular review of the Company's financial position relative to the risk and opportunities for the Company's business;
- periodic review of the Company's intellectual property estate;
- review and assessment of succession planning and performance concerns for the Section 16 officers; and
- periodic review of the Company's compensation programs.

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The discussion above of risk oversight matters reviewed by the board of directors is intended to be illustrative only and not a complete list of all important matters reviewed and considered by the board of directors in providing oversight and direction for the Company's senior management and business.

The risk oversight function of the board of directors is also administered through various board committees. The audit committee oversees the management of financial, accounting, internal controls, disclosure controls and the engagement arrangement and regular oversight of the independent auditors. The audit committee also periodically reviews the Company's investment policy for its cash reserves and fraud monitoring practices and procedures, including the maintenance and monitoring of a whistleblower hotline.

The compensation committee is responsible for the design and oversight of the Company's compensation programs. The compensation committee also regularly reviews and reports to the board of directors on succession planning for the chief executive officer and certain other select senior management positions.

The nominating and corporate governance committee periodically reviews the Company's corporate governance practices, including certain risks that those practices are intended to address. The nominating and corporate governance committee periodically reviews the composition of the board of directors to help ensure that a diversity of skills and experiences is represented by the members of the board of directors taking into account the stage of growth of the Company and its strategic direction.

In carrying out their risk oversight functions, the board of directors and its committees routinely request and review management updates, reports from the independent auditors and legal and regulatory advice from outside experts, as appropriate, to assist in discerning and managing important risks that may be faced by the Company. The board of directors is committed to continuing to ensure and evolve its risk oversight practices as appropriate given the stage of the Company's evolution as a drug development company and the fast-paced changes in the biopharmaceutical industry.

Independence of the Board of Directors

Under the rules of NASDAQ, independent directors must comprise a majority of a listed company's board of directors within twelve months from the date of listing. In addition, NASDAQ rules require that, subject to specified exceptions, each member of a listed company's audit, compensation and nominating and corporate governance committees be independent. Audit committee members must also satisfy additional independence criteria set forth in Rule 10A-3 under the Exchange Act, and in NASDAQ rule 5605(c)(2)(A). Under NASDAQ rules, a director will only qualify as an "independent director" if, in the opinion of that company's board of directors, that person does not have a relationship that would interfere with the exercise of independent judgment in carrying out the responsibilities of a director.

To be considered independent for purposes of Rule 10A-3, a member of an audit committee of a listed company may not, other than in his or her capacity as a member of the audit committee, the board of directors or any other board committee, accept, directly or indirectly, any consulting, advisory or other compensatory fee from the listed company or any of its subsidiaries or be an affiliated person of the listed company or any of its subsidiaries.

Our board of directors has undertaken a review of its composition, the composition of its committees and the independence of each director. Based upon information requested from and provided by each director concerning his background, employment and affiliations, including family relationships, our board of directors has determined that none of J. Kevin Buchi, Martin Freed, M.D., Stephen J. Hoffman, M.D., Ph.D., Peter Kolchinsky, Ph.D., Adam M. Koppel, M.D., Ph.D., Marc Kozin, Dennis H. Langer, M.D., J.D., Anna Protopapas, or Cynthia Smith, representing nine of our 10 directors, have a relationship that would interfere with the exercise of independent judgment in carrying out the responsibilities of a director and that each of these directors is "independent" as that term is defined under NASDAQ rules. Our board of directors has also determined that Mr. Buchi, Dr. Hoffman and Mr. Kozin, members of our audit committee, Dr. Koppel, Ms. Protopapas, and Dr. Langer, members of our compensation committee, and Dr. Freed, Dr. Kolchinsky and Ms. Smith, members of our nominating and corporate governance committee, satisfy the independence standards for those committees established by applicable SEC and NASDAQ rules. In making these determinations, our board of directors considered the relationships that each non-employee director has with us and all other facts and circumstances our board of directors deemed relevant in determining their independence, including the beneficial ownership of our capital stock by each non-employee director and by such non-employee director's

affiliates, if applicable.

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Information Regarding the Committees of the Board of Directors

The board of directors has three regularly constituted committees: an audit committee, a compensation committee and a nominating and corporate governance committee. The following table provides membership and meeting information as of December 31, 2018 for each of the board committees:

Name	Audit	Compensation	Nominating and Corporate Governance
Douglas M. Fambrough, III, Ph.D.	—	—	—
J. Kevin Buchi	X ⁽¹⁾	—	—
Martin Freed, M.D.	—	—	X ⁽¹⁾
Stephen J. Hoffman, M.D., Ph.D.	X	—	—
Peter Kolchinsky, Ph.D.	—	—	X
Adam M. Koppel, M.D., Ph.D.	—	X ⁽¹⁾	—
Dennis H. Langer, M.D., J.D.	—	X	—
Cynthia Smith	—	—	X
Marc Kozin	X	—	—
Anna Protopapas	—	X	—
Total meetings in 2018	7	4	12

⁽¹⁾ Committee chairperson.

Below is a description of each committee of the board of directors.

Audit Committee

The board of directors has established an audit committee that oversees management's conduct of our corporate accounting and financial reporting process. The responsibilities and duties of the audit committee include, among other things:

- evaluating the performance and assessing the qualifications of our independent registered public accounting firm;
- determining whether to retain or terminate our independent registered public accounting firm or to appoint and engage a new independent registered public accounting firm;
- reviewing and determining the engagement of the independent registered public accounting firm, including the overall scope and plans for their respective audits, the adequacy of staffing and compensation, and negotiating and executing, on behalf of the Company, engagement letters with the independent auditors;
- establishing guidelines and procedures with respect to the rotation of the lead or coordinating audit partners having primary responsibility for the audit and the audit partner responsible for reviewing the audit;
- reviewing and approving the retention of our independent registered public accounting firm for any permissible non-audit services and the fees or other compensation for such services;
- obtaining and reviewing, at least annually, a formal written statement prepared by the independent registered public accounting firm delineating all relationships between our independent registered public accounting firm and the Company, discussing with our independent registered public accounting firm, and reviewing its independence from management and the Company;
- reviewing with our independent registered public accounting firm any management or internal control letter issued or proposed to be issued by our independent registered public accounting firm and management's response;
- reviewing with management and our independent registered public accounting firm the scope, adequacy and effectiveness of our financial reporting controls;
- reviewing and discussing with management, any internal auditor and our independent registered public accounting firm, as appropriate, the Company's major financial risks, the Company's policies for assessment and management of such risks and the steps to be taken to control such risks;

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establishing and maintaining procedures for the receipt, retention and treatment of complaints with respect to accounting, internal accounting controls or auditing matters, including procedures for the confidential and anonymous submission by employees of concerns regarding accounting or auditing matters;

investigating and resolving any disagreements between the Company's management and our independent registered public accounting firm regarding the Company's financial reporting, accounting practices or accounting policies, and reviewing with our independent registered public accounting firm any other problems or difficulties it may have encountered during the course of the audit work;

meeting with senior management and our independent registered public accounting firm in separate executive sessions;

reviewing the financial statements to be included in our quarterly reports on Form 10-Q and our annual reports on Form 10-K;

discussing with management and our independent registered public accounting firm the results of the independent registered public accounting firm's review of our quarterly financial statements and the results of our annual audit and the disclosures contained under the caption "Management's Discussion and Analysis of Financial Condition and Results of Operations" in our periodic reports;

reviewing and discussing with management and our independent registered public accounting firm any material financial arrangements of the Company which do not appear on the financial statements of the Company and any significant transactions or courses of dealing with parties related to the Company;

reviewing with management and our independent registered public accounting firm significant issues that arise regarding accounting principles and financial statement presentation;

discussing with management and our independent registered public accounting firm any correspondence from or with regulators or governmental agencies, any employee complaints or any published reports that raise material issues regarding the Company's financial statements, financial reporting process or accounting policies;

reviewing the Company's investment policy for its cash reserves and fraud monitoring practices and procedures;

investigating any matter brought to the committee's attention that is within the scope of the committee's charter;

preparing an audit committee report for inclusion in the Company's annual reports or proxy statements that describes the committee's composition and responsibilities and how those responsibilities were discharged;

reviewing with management, our independent registered public accounting firm and the Company's counsel any legal or regulatory matters that may have a material impact on the financial statements and related compliance policies;

establishing policies governing, or otherwise determine the appropriateness of, the hiring by the Company of any current or former employee of the independent registered public accounting firm; and

reviewing and approving in advance any proposed related party transactions consistent with the Company related party transactions policy and reports to the board of directors.

The audit committee has the authority to retain special legal, accounting or other consultants to advise the committee as it deems necessary, at the Company's expense, to carry out its duties and to determine the compensation of any such advisors.

The members of the audit committee are Mr. Buchi, Dr. Hoffman, and Mr. Kozin. Mr. Buchi serves as the chairperson of the committee. Our board of directors has determined that each member of the audit committee is "independent" for audit committee purposes as that term is defined in the applicable rules of the SEC and NASDAQ. Our board of directors has designated Dr. Hoffman as an "audit committee financial expert" as defined under the applicable rules of the SEC. The board of directors has adopted a written charter for the audit committee, which is available on our corporate website at www.dicerna.com.

Compensation Committee

The compensation committee of the board of directors reviews the type and level of compensation for directors, officers, employees and compensation consultants of the Company, recommends certain compensation actions to the board of directors and administers the various compensation programs to be adopted by the Company. The responsibilities and duties of the compensation committee include, among other things:

reviewing and approving the structure and guidelines for various incentive compensation and benefit plans;

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granting equity awards under the various equity incentive compensation and benefit plans;

approving the compensation for the chief executive officer, including, without limitation, annual salary, bonus, equity compensation and other direct or indirect benefits;

approving the compensation levels for each Section 16 officer and compensation to vice-president level employees and above, or to employees that report directly to the chief executive officer, including, without limitation, annual salary, bonus, equity compensation and other direct or indirect benefits;

recommending for approval by the board of directors the compensation levels for the members of the board of directors who are outside directors;

reviewing on a periodic basis the operation of the Company's executive compensation programs to determine whether they remain supportive of the Company's business objectives and are competitive relative to comparable companies, and establishing and periodically reviewing policies for the administration of executive compensation programs;

reviewing the Company's executive compensation arrangements to evaluate whether incentive and other forms of compensation do not encourage inappropriate or excessive risk taking, and reviewing and discussing, at least annually, the relationship between risk management policies and practices, corporate strategy and the Company's executive compensation arrangements;

reviewing and discussing with management the Company's major risks relating to the purview of the compensation committee, the Company's policies for assessment and management of such risks and the steps to be taken to control such risks;

preparing and approving the committee report to be included in the Company's proxy statements and annual reports on Form 10-K, if required;

reviewing management recommendations on organization structure and development;

reviewing performance of the Section 16 officers and vice-president level employees that report directly to the chief executive officer; and

investigating any matter brought to the committee's attention within the scope of the committee's duties.

The compensation committee has the sole authority to retain or replace, at the Company's expense, any independent counsel, compensation and benefits consultants and other outside experts or advisors as the committee believes to be necessary or appropriate. The committee may also utilize the services of the Company's regular legal counsel or other advisors to the Company. The compensation committee retained Frederic W. Cook & Co. to conduct an independent review of the Company's executive compensation program on behalf of the compensation committee for 2014, 2015, 2016, 2017, and 2018.

The members of the compensation committee are Mr. Koppel, Dr. Langer, and Ms. Protopapas. Mr. Koppel serves as the chairperson of the committee. Our board of directors has determined that each member of the compensation committee is an independent director for compensation committee purposes as that term is defined in the applicable NASDAQ rules and is a "non-employee director" within the meaning of Rule 16b-3(d)(3) promulgated under the Exchange Act. The board of directors has adopted a written charter for the compensation committee, which is available on our corporate website at www.dicerna.com.

Nominating and Corporate Governance Committee

The responsibilities and duties of the nominating and corporate governance committee include, among other things:

- establishing criteria for board membership, including standards for independence, and considering and assessing the independence of the directors;
- identifying, evaluating, reviewing and nominating qualified candidates to serve on the board of directors and to each of the board's committees;
 - evaluating, reviewing and considering the nomination of current directors for re-election to the board of directors and monitoring the size of the board;
- considering stockholder recommendations for director nominations and other proposals submitted by stockholders;
 - developing a set of corporate governance principles and policies applicable to the Company, and periodically reviewing and assessing the application of these principles;

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reviewing with management and the board of directors the adequacy of and compliance with the Company's code of business conduct and ethics;

reviewing, discussing and assessing, at least annually, the performance of the board of directors;

establishing and overseeing procedures for the receipt, retention and treatment of complaints received by the Company with respect to legal and regulatory compliance (except for compliance relating to accounting, internal accounting controls, auditing matters and financial disclosure and reporting);

overseeing and reviewing the processes and procedures used by the Company to provide information to the board of directors and its committees;

reviewing and discussing with management the Company's major risks relating to the purview of the nominating and corporate governance committee, the Company's policies for assessment and management of such risks and the steps to be taken to control such risks;

providing recommendations to the board of directors to establish such special committees as may be desirable or necessary from time to time in order to address ethical, legal, business or other matters that may arise; and

investigating any matter brought to the committee's attention within the scope of the committee's duties.

The nominating and corporate governance committee may retain, at the Company's expense, any independent counsel, experts or advisors that the committee believes to be desirable and appropriate. The committee may also use the services of the Company's regular legal counsel or other advisors to the Company.

The members of the nominating and corporate governance committee are Dr. Freed, Dr. Kolchinsky, and Ms. Smith. Dr. Freed serves as the chairperson of the committee. Our board of directors has determined that each of the committee members is an independent director for nominating and corporate governance committee purposes as that term is defined in the applicable NASDAQ rules. The board of directors has adopted a written charter for the nominating and corporate governance committee, which is available on our corporate website at www.dicerna.com. The nominating and corporate governance committee reviews candidates for director nominees in the context of the current composition of the board, our operating requirements and the long-term interests of stockholders. In conducting this assessment, the nominating and corporate governance committee considers diversity, age, skills and such other factors as it deems appropriate given our current needs and those of our board to maintain a balance of knowledge, experience and capability. The committee also periodically reviews the overall effectiveness of the board, including board attendance, level of participation, quality of performance, self-assessment reviews and any relationships or transactions that might impair director independence. In the case of new director candidates, the committee will also determine whether the nominee must be independent for NASDAQ purposes, which determination is based upon applicable NASDAQ listing standards, applicable SEC rules and regulations and the advice of counsel, if necessary. The committee may also use its network of contacts to compile a list of potential candidates and engage, if it deems appropriate, a professional search firm. The committee conducts any appropriate and necessary inquiries into the backgrounds and qualifications of possible candidates after considering the function and needs of the board. The committee meets to discuss and consider such candidates' qualifications and then selects a nominee for recommendation to the board by majority vote.

The nominating and corporate governance committee will consider for nomination any qualified director candidates recommended by our stockholders. Any stockholder who wishes to recommend a director candidate is directed to submit in writing the candidate's name, biographical information, relevant qualifications and other information required by our bylaws to our Secretary at our principal executive offices before the deadline set forth in our bylaws. All written submissions received from our stockholders will be reviewed by the nominating and corporate governance committee at the next appropriate meeting. The nominating and corporate governance committee will evaluate any suggested director candidates received from our stockholders in the same manner as recommendations received from management, committee members or members of our board.

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Stockholder Communications with the Board of Directors

The board of directors will consider any written or electronic communication from our stockholders to the board, a committee of the board or any individual director. Any stockholder who wishes to communicate to the board of directors, a committee of the board or any individual director should submit written or electronic communications to our Secretary at our principal executive offices, which shall include contact information for such stockholder. All communications received from stockholders shall be forwarded by our Secretary to the board of directors, a committee of the board or an individual director, as appropriate, on a periodic basis, but in any event no later than the board of director's next scheduled meeting. Certain communications that are unrelated to the duties and responsibilities of the board of directors, such as product complaints, product inquiries, new product suggestions, resumes and other forms of job inquiries, surveys and business solicitations or advertisements, will be excluded and will not be forwarded by our Secretary. Additionally, materials that are unduly hostile, threatening, illegal or similarly unsuitable will be excluded and will not be forwarded by our Secretary, provided that any such communication that is filtered out must be made available to any non-management director upon request. The board of directors, a committee of the board, or individual directors, as appropriate, will consider and review carefully any communications from stockholders forwarded by our Secretary.

Code of Business Conduct and Ethics

We have adopted a code of business conduct and ethics applicable to all employees, including the principal executive officer, principal financial officer and principal accounting officer or controller, or persons performing similar functions. The code of business conduct and ethics is available on our website at www.dicerna.com. Amendments to, and waivers from, the code of business conduct and ethics that apply to any director, executive officer or persons performing similar functions, and that relate to any element of the code of ethics definition enumerated in Item 406(b) of Regulation S-K will be disclosed at the website address provided above and, to the extent required by applicable regulations, on a Current Report on Form 8-K filed with the SEC.

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DIRECTOR COMPENSATION

Under our non-employee director compensation program, we compensate our non-employee directors with a combination of cash and equity. Each non-employee director is eligible to receive an annual retainer of \$40,000 for serving on the board of directors, and the chairperson of our board of directors, if a non-employee director, is eligible to receive an additional annual retainer of \$40,000. The program also provides that we compensate the members of the board of directors for service on our committees as follows:

• The chairperson of our audit committee will receive an annual cash retainer of \$15,000 for such service, and each of the other members of the audit committee will receive an annual cash retainer of \$7,500;

• The chairperson of our compensation committee will receive an annual cash retainer of \$12,500 for such service, and each of the other members of the compensation committee will receive an annual cash retainer of \$5,200; and

• The chairperson of our nominating and corporate governance committee will receive an annual cash retainer of \$7,000 for such service, and each of the other members of the nominating and corporate governance committee will receive an annual cash retainer of \$5,200.

Under our non-employee director compensation program, each new non-employee director will be granted an option to purchase 25,000 shares of our common stock (or 33,000 shares in the case of a new chairperson of the board of directors) upon his or her appointment to the board of directors, and each non-employee director continuing in office immediately after our annual meeting each year will be granted an option to purchase 25,000 shares of our common stock (or 33,000 shares in the case of the chairperson of the board of directors). Each option granted under our director compensation program has an exercise price equal to the closing price of our common stock on the grant date. The initial grants made to new non-employee directors will vest as to one-third of the grant after one year and as to the remaining two-thirds of the grant in quarterly installments over the two-year period thereafter, subject to the director's continued service through the applicable vesting date. Grants made to continuing non-employee directors following our annual meeting each year vest monthly over 12 months after the grant date, subject to the director's continued service through the applicable vesting date. Each option granted to non-employee directors has an exercisability period of two years post termination in the event of terminations due to death, disability or not for cause.

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Director Compensation Table—Year Ended December 31, 2018

The following table presents information regarding the compensation paid for 2018 to members of our board of directors who are not also employed by us or any of our subsidiaries (our non-employee directors). The compensation paid to Douglas M. Fambrough, III, Ph.D., who is also our chief executive officer, is set forth below in the section titled “Executive Compensation” and the related explanatory tables. Dr. Fambrough was not entitled to receive additional compensation for his service as a director.

Name	Fees earned or paid in cash (\$)	Option awards ⁽¹⁾ (\$)	All other compensation (\$)	Total (\$)
J. Kevin Buchi ⁽²⁾	19,375	253,444	—	272,819
Martin Freed, M.D.	47,000	218,625	—	265,625
Stephen J. Hoffman, M.D., Ph.D.	53,762	218,625	—	272,387
Adam M. Koppel, M.D., Ph.D.	41,517	218,625	—	260,142
Brian K. Halak, Ph.D.	53,654	218,625	—	272,279
David M. Madden	99,122	288,584	—	387,706
Peter Kolchinsky, Ph.D.	45,200	218,625	—	263,825
Dennis H. Langer, M.D., J.D.	46,763	218,625	—	265,388
Cynthia Smith ⁽²⁾	16,517	253,444	—	269,961
Bruce Peacock ⁽³⁾	27,500	—	—	27,500

Pursuant to applicable SEC rules, the amounts reported in the “Option Awards” column of the table above reflect the grant date fair value of the option awards granted to our non-employee directors during 2018, which consisted of the annual option grant to non-employee directors at the 2018 annual meeting and the new director option grants to Mr. Buchi and Ms. Smith awarded in connection with the commencement of their service on the Board in August 2018. These values have been determined under the principles used to calculate the value of equity awards for purposes of our financial statements, excluding the effect of estimated forfeitures related to service-based vesting conditions. For a discussion of the assumptions and methodologies used to calculate the amounts referred to above, please see the discussion of option awards contained in Note 11, Stock-Based Compensation, to our consolidated financial statements for the fiscal year ended December 31, 2018 included in our 2018 Annual Report on Form 10-K. As of December 31, 2018, our non-employee directors had outstanding option awards to acquire shares of our common stock as follows: Mr. Buchi, 25,000; Dr. Freed, 75,000; Dr. Hoffman, 120,000; Dr. Koppel, 75,000; Dr. Halak, 120,000; Mr. Madden, 156,000; Dr. Kolchinsky, 120,000; Dr. Langer, 126,945; and Ms. Smith, 25,000.

(2) Mr. Buchi and Ms. Smith commenced service on the board of directors in August 2018.

(3) Mr. Peacock resigned from the board of directors effective June 21, 2018.

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EXECUTIVE OFFICERS

The following sets forth information about our executive officers as of April 30, 2019.

Name	Position	Age
Douglas M. Fambrough, III, Ph.D.	President, Chief Executive Officer and Director	50
Bob D. Brown, Ph.D.	Chief Scientific Officer, Senior Vice President	54
John B. Green	Chief Financial Officer	65
Ralf Roskamp, M.D.	Chief Medical Officer	66
James B. Weissman	Chief Business Officer	57

The following is biographical information as of the date hereof for our executive officers other than Douglas M. Fambrough, III, Ph.D., whose biographical information is included in “Proposal 1” above.

Bob D. Brown, Ph.D.

Bob D. Brown, Ph.D. initially served as our senior vice president of research beginning in May 2008 and has served as our chief scientific officer since January 2012. From March 2003 to March 2008, Dr. Brown held various positions at Genta Incorporated, most recently as its vice president of research and technology. Previously, he was a co-founder and vice president of research and development of Oasis Biosciences Inc., which was acquired by Gen-Probe Incorporated. Dr. Brown is an inventor or co-inventor on 16 issued patents and dozens of patent applications covering oligonucleotide and conventional small molecule therapeutic agents, diagnostic tool and oligonucleotide and small molecule drug delivery technologies. Dr. Brown holds a Ph.D. in molecular biology from the University of California, Berkeley, and a B.S. in chemistry and biology from the University of Washington, Seattle.

John B. Green

John B. (“Jack”) Green initially joined us as interim chief financial officer in January 2016 and became our full time chief financial officer in April 2016. Mr. Green was the chief financial officer of Verastem, Inc. from May 2013 until April 2016. Prior to joining Verastem, Inc., from March 2011 until December 2012, Mr. Green was Vice President, Finance of On-Q-ity Inc. and from May 2002 until June 2010, Mr. Green was the Senior Vice President and Chief Financial Officer of GTC Biotherapeutics, Inc. (formerly Genzyme Transgenics Corporation). Mr. Green is a Certified Public Accountant. He holds a master’s degree in business administration from Boston University Graduate School of Management and a bachelor’s degree from The College of the Holy Cross.

Ralf Roskamp, M.D.

Ralf Roskamp, M.D., joined Dicerna as chief medical officer in June 2017. Dr. Roskamp brings to Dicerna more than 20 years of research and development experience spanning the entire drug development cycle, from pre-clinical through product commercialization. Prior to joining Dicerna, from September 2, 2015 to May 23, 2017, Dr. Roskamp was chief medical officer at Summit Therapeutics. Prior to Summit, Dr. Roskamp held executive-level positions in clinical research and drug development at NPS Pharmaceuticals (acquired by Shire), Ikaria, Kos Pharmaceuticals (acquired by Abbott Laboratories), Aventis Pharmaceuticals (formerly Hoechst Marion Roussel), and Hoechst AG. Dr. Roskamp was a member of the board of directors of Bioblast Pharma in Tel Aviv, Israel from May 2016 to August 2017. Dr. Roskamp is a pediatric endocrinologist with more than 15 years of experience in clinical medicine. He received his M.D. from the University of Bonn, Germany.

James B. Weissman

James B. Weissman has served as our chief business officer since January 2012. From January 2006 to January 2012, Mr. Weissman was senior director and then vice president, business development of MannKind Corporation (NASDAQ: MNKD), where he was responsible for leading the company’s activities related to licensing, new products and strategic planning. Prior to MannKind, Mr. Weissman held leadership positions in both business development and marketing at Pfizer Pharmaceuticals, Inc. in Tokyo, most recently as senior director of marketing, responsible for the sales, profit and strategic targets for the company’s specialty products, in a variety of therapeutic areas. Mr. Weissman also served as a board member and vice president of the North Jersey Masters Track and Field Club from October 2008 to January 2012 and served as a board member of the Town of Bedford, Massachusetts Trails Committee from July 2012 to December 2015. Mr. Weissman holds a B.S. from Bates College in Maine.

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EXECUTIVE COMPENSATION

Overview

Our executive compensation program is based on a pay-for-performance philosophy. We designed our executive compensation program to achieve the following primary objectives:

- provide compensation and benefit levels that will attract, retain, motivate and reward a highly talented executive team;
- create an environment that fosters high performance and strong sense of urgency to bring our novel therapeutic approach to patients;
- establish a direct link between the Company, individual and team performance and results and our executives' compensation; and
- align the interests and objectives of our executives with those of our stockholders by linking executive equity awards to long-term stockholder value creation.

Compensation for our named executive officers is comprised primarily of the following three main components:

• **Base Salary.** Base salaries are determined on a case-by-case basis for each executive, including consideration of each officer's experience, expertise and performance, as well as market compensation levels for similar positions.

• **Annual Cash Incentive Bonuses.** Annual cash incentive bonuses are contingent upon our achievement of certain operational and financial objectives, which for 2018 primarily related to pre-clinical and clinical development, technology platform, business development and financial position goals, and also depend upon the performance of the individual. Each executive's target bonus amount is expressed as a percentage of the executive's base salary and intended to be commensurate with the executive's position and responsibilities. Target bonuses for our named executive officers ranged from 40% to 60% of base salary for the year ended December 31, 2018.

• **Long-term Equity Incentives.** We believe equity awards in the form of options to purchase shares of our common stock provide an incentive for our executives to focus on driving growth in our stock price and long-term value creation and help us to attract and retain key talent. In addition, the granting of options helps ensure that the interests of our executive officers are aligned with those of our stockholders as the options only have value if the value of the Company's stock increases after the date the option is granted. In 2018, we granted options to our named executive officers that are scheduled to vest based on the executive's continued service to the Company to provide an additional retention incentive.

Our named executive officers are entitled to certain benefits if the executive's employment terminates in certain circumstances or if a change of control occurs. We also may provide our named executive officers with relocation, housing or other benefits in certain circumstances. We do not provide any of our named executive officers with a tax gross-up payment on any severance or change of control benefits although we may provide tax reimbursement payments on relocation and other benefits.

Our compensation committee reviews our named executive officers' overall compensation packages on an annual basis or more frequently as it deems appropriate. The named executive officers may attend portions of compensation committee meetings and make proposals concerning compensation issues for the compensation committee's approval. All decisions concerning named executive officers' compensation are made in executive session without the named executive officers present. From time to time, we may retain independent compensation consultants as we consider appropriate to help identify appropriate peer group companies and to obtain and evaluate current executive compensation data. The compensation committee retained Frederic W. Cook & Co. as an independent compensation consultant to assist in designing our executive compensation program for 2018. The compensation committee has assessed the independence of its independent compensation consultant pursuant to the NASDAQ rules, and the Company concluded that the compensation consultant's work for the compensation committee did not raise any conflict of interest.

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2018 Summary Compensation Table

The following table provides a summary of compensation paid to our principal executive officer and each of our two other most highly compensated executive officers who were serving as executive officers of the Company as of December 31, 2018 (collectively, the “named executive officers”).

Name and principal position	Fiscal year	Base salary (\$)	Option awards (\$) ⁽¹⁾	Non-equity incentive plan compensation (\$) ⁽²⁾	All other compensation (\$) ⁽³⁾	Total (\$)
Douglas M. Fambrough, III, Ph.D. President and Chief Executive Officer	2018	507,150	1,637,100	334,719	18,592	2,497,561
	2017	490,000	467,498	261,043	18,492	1,237,033
Bob D. Brown, Ph.D. Chief Scientific Officer, Senior Vice President	2018	414,000	674,100	182,160	18,592	1,288,852
	2017	400,000	155,833	148,000	18,292	722,125
John B. Green Chief Financial Officer	2018	388,125	674,100	170,779	18,592	1,251,596

(1) Pursuant to applicable SEC rules, the amounts reported in the “Option Awards” column reflect the grant date fair value of the option awards granted to our named executive officers during the year, and do not reflect the actual amounts earned. These values have been determined under the principles used to calculate the value of equity awards for purposes of our consolidated financial statements, excluding the effect of estimated forfeitures related to service-based vesting conditions. For a discussion of the assumptions and methodologies used to calculate the amounts referred to above, please see the discussion of option awards contained in Note 11, Stock-Based Compensation, to our consolidated financial statements for the fiscal year ended December 31, 2018 included in our 2018 Annual Report on Form 10-K.

(2) These amounts consist of payments under our annual incentive bonus plan, which is based on our performance against certain operational and financial goals established by our compensation committee, as well as the performance of the individual. Based on the compensation committee’s assessment of performance with respect to our pre-clinical and clinical development, technology platform, business development and financial position goals, and based upon individual performance, our named executive officers were awarded bonuses equal to 110% of target bonus levels for 2018.

(3) The amounts reported in this column consist of matching contributions the Company made to each executive’s account under our 401(k) plan, long-term disability gross-ups, and a wellness benefit.

Employment Agreements

Douglas M. Fambrough, III, Ph.D.

In July 2016, we entered into an amended and restated employment agreement with Dr. Fambrough (the “Fambrough Agreement”). Dr. Fambrough’s current annual base salary is \$524,900 and he will be eligible to participate in the Company’s annual bonus program, with a target opportunity equal to 60% of his base salary. Pursuant to the Fambrough Agreement, Dr. Fambrough’s employment with us is “at-will,” and his employment is not for a specified term. The Fambrough Agreement also provides that Dr. Fambrough is eligible to participate in our benefit programs made available to our senior executives generally.

Under the Fambrough Agreement, if Dr. Fambrough’s employment is terminated by us other than for “cause” (as such term is defined in the Fambrough Agreement), if we terminate his employment due to his “disability” (as such term is defined in the Fambrough Agreement), or by him for “good reason” (as such term is defined in the Fambrough Agreement), Dr. Fambrough will receive the following severance benefits: (i) 18 months of continued base salary payments; (ii) a pro rata portion of his annual bonus for the year in which the termination occurs, based on actual performance during the entire performance period; (iii) 18 months of Company-reimbursed Consolidated Omnibus

Budget Reconciliation Act (“COBRA”) premiums; and (iv) outstanding and unvested stock options that were scheduled to vest in the 12-month period following his termination of employment will accelerate in full.

In addition, if we terminate Dr. Fambrough other than for cause, if we terminate his employment due to his “disability” or if Dr. Fambrough terminates his employment for good reason during the one-year period following a change of control (as defined in the Fambrough Agreement), then Dr. Fambrough will receive the following severance benefits:

(i) a lump sum severance payment equal to 1.5, multiplied by the sum of Dr. Fambrough’s annual base salary and target annual bonus; (ii) a pro rata portion of Dr. Fambrough’s target bonus for the year in which the termination occurs; (iii) 18 months of Company-reimbursed COBRA premiums; and (iv) outstanding and unvested stock options will accelerate in full. Under the terms of the Fambrough Agreement, if any payment or other benefit provided to Dr. Fambrough pursuant to the Fambrough Agreement

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constitutes an “excess parachute payment” within the meaning of Section 280G of the Internal Revenue Code of 1986, as amended (the “Code”), and would be subject to an excise tax imposed by Section 4999 of the Code, then the amounts actually paid to Dr. Fambrough will be reduced to the extent that such a reduction would result in Dr. Fambrough receiving a greater amount than he would have received if the payment had been made in full.

Dr. Fambrough’s right to receive these severance benefits is subject to his providing a release of claims in favor of us. Dr. Fambrough has also entered into an agreement that includes noncompetition and nonsolicitation covenants in favor of us that apply during Dr. Fambrough’s employment with us and for two years thereafter.

Bob D. Brown, Ph.D. and John B. Green

In November 2016, we entered into and amended and restated employment agreements with Mr. Green, and in July 2016, we entered into an amended and restated employment agreement with Dr. Brown (collectively, “Employment Agreements”). Per the Employment Agreements, their employment with us is “at-will,” and not for a specified term. Under the Employment Agreements, Mr. Green and Dr. Brown’s current annual base salaries are \$401,709 and \$428,490, respectively, and each are eligible to participate in the Company’s annual bonus program, with a target opportunity equal to 40% of base salary. The Employment Agreements also provide that each executive is eligible to participate in our benefit programs made available to our senior executives generally.

Pursuant to the respective Employment Agreements, if we terminate the executive other than for “cause” (as defined in the respective Employment Agreement), if we terminate the executive’s employment due to the executive’s “disability” (as defined in the relevant employment agreement), or if the executive officer terminates his employment for “good reason” (as defined in the respective Employment Agreement), then the executive will receive the following severance benefits: (i) 12 months of continued base salary payments; (ii) a pro rata portion of his annual bonus for the year in which the termination occurs, based on actual performance during the entire performance period; and (iii) up to 12 months of Company-reimbursed COBRA premiums.

In addition, if we terminate the executive other than for cause, if we terminate the executive’s employment due to the executive’s disability, or if the executive terminates his employment for good reason during the one-year period following a change of control (as defined in the respective Employment Agreement), then the executive officer will receive the following severance benefits: (i) a lump sum severance payment equal to the sum of the executive’s annual base salary and target annual bonus; (ii) a pro rata portion of the executive’s target bonus for the year in which the termination occurs; and (iii) up to 12 months of Company-reimbursed COBRA premiums. Except as otherwise provided for in an award agreement, any outstanding equity awards will vest in full upon a change in control of the Company. Under the terms of the Employment Agreements, if any payment or other benefit provided to the executive pursuant to his Employment Agreement constitutes an “excess parachute payment” within the meaning of Section 280G of the Code, and would be subject to an excise tax imposed by Section 4999 of the Code, then the amounts actually paid to the executive officer will be reduced to the extent that such a reduction would result in the executive officer receiving a greater amount than he would have received if the payment had been made in full.

Each executive’s right to receive the aforementioned severance benefits is subject to him providing a release of claims in favor of us. Each of Mr. Green and Dr. Brown also have entered into an agreement that includes noncompetition and nonsolicitation covenants in favor of us that apply during each of these employee’s employment with us and for two years thereafter.

Defined Contribution Plan

As part of our overall compensation program, we provide all full-time employees, including our named executive officers, with the opportunity to participate in a defined contribution 401(k) plan. Employees may elect to defer up to 90 percent of their eligible compensation (not to exceed the statutorily prescribed annual limit) in the form of elective deferral contributions to our 401(k) plan. Our 401(k) plan also has a “catch-up contribution” feature for employees aged 50 or older (including those who qualify as “highly compensated” employees) who can defer amounts over the statutory limit that applies to all other employees below age 50. We currently provide matching contributions under the plan of up to six percent of an employee’s eligible compensation.

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Outstanding Equity Awards at December 31, 2018

The following table presents information regarding the outstanding stock options held by each of the named executive officers as of December 31, 2018, including the vesting dates for the portions of these awards that had not vested as of that date. None of the named executive officers held any outstanding restricted stock or other equity awards as of that date.

Name	Grant date	Number of securities underlying unexercised options exercisable (#)	Number of securities underlying unexercised options unexercisable (#)	Option exercise price (\$)	Option expiration date
Douglas M. Fambrough, III, Ph.D.	9/24/2013	281,250	—	3.42	9/24/2023
	9/24/2013	281,250	—	3.42	9/24/2023
	4/16/2014	471,900	(1)—	16.30	4/16/2024
	1/9/2015	225,000	—	18.50	1/9/2025
	1/8/2016	168,749	56,251	(2)9.09	1/8/2026
	1/3/2017	112,499	112,501	(2)2.97	1/3/2017
	1/4/2018	36,750	191,250	(2)9.30	1/4/2028
Bob D. Brown, Ph.D.	10/14/2010	267	—	3.42	10/14/2020
	9/24/2013	114,844	—	3.42	9/24/2023
	9/24/2013	87,500	—	3.42	9/24/2023
	4/16/2014	165,050	—	16.30	4/16/2024
	1/9/2015	75,000	—	18.50	1/9/2025
	1/8/2016	93,749	31,251	(2)9.09	1/8/2026
	1/3/2017	37,499	37,501	(2)2.97	1/3/2027
	1/4/2018	26,250	78,750	(2)9.30	1/4/2018
John B. Green	4/14/2016	176,666	88,334	(3)5.45	4/14/2026
	1/3/2017	37,499	37,501	(2)2.97	1/3/2027
	1/4/2018	26,250	78,750	(2)9.30	1/4/2028

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- (1) Consists of (a) 71,900 vested stock options held by Dr. Fambrough, (b) 200,000 stock options transferred as a bona fide gift of vested stock options to an irrevocable trust for Dr. Fambrough's minor child A ("Child A Trust") for which the Dr. Fambrough's spouse serves as trustee, and (d) 200,000 stock options transferred as a bona fide gift of vested stock options to an irrevocable trust for Dr. Fambrough's minor child B ("Child B Trust") for which Dr. Fambrough's spouse serves as trustee. Dr. Fambrough disclaims beneficial ownership of the securities held by the Child A Trust and Child B Trust except to the extent of his proportionate pecuniary interest therein, if any, and this report shall not be deemed an admission that the reporting person is the beneficial owner of the securities for purposes of Section 16 of the Securities Exchange Act of 1934, as amended, or for any other purpose.
- (2) These options vest in monthly installments, with the first such installment vesting on the last day of the month of grant and an additional installment vesting on the last day of each of the 47 months thereafter.
- (3) This award vests as follows: 25% on April 14, 2017, and the remaining 75% in 36 equal monthly installments thereafter.

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Securities Authorized for Issuance under Equity Compensation Plans

The following table provides information about the securities authorized for issuance under our equity compensation plans as of December 31, 2018, which as of that date consisted of our 2007 Employee, Director and Consultant Stock Plan, as amended, 2010 Employee, Director and Consultant Equity Incentive Plan, as amended, Amended and Restated 2014 Performance Incentive Plan, 2014 Employee Stock Purchase Plan and our 2016 Inducement Plan:

Number of securities to be issued upon exercise of outstanding options, warrants and rights	Weighted-average price of outstanding options, warrants and rights	Number of securities remaining available for future issuance under equity compensation plans (excluding securities reflected in column (a))	Total of shares reflected in columns (a) and (c)
(a)	(b)	(c)	(d)
Equity compensation plans approved by stockholders			
7,312,065	\$ 9.64	2,717,590	(1) 10,029,655
Equity compensation plans approved by stockholders			
475,625	\$ 5.07	2,875,000	(2) 3,350,625
Total	\$ 9.36	5,592,590	13,380,280

Includes 872,411 and 1,845,179 shares of common stock available for issuance under the Amended and Restated (1) 2014 Performance Incentive Plan and the 2014 Employee Stock Purchase Plan, respectively, as of December 31, 2018.

Shares of common stock issuable as of December 31, 2018 under the Dicerna Pharmaceuticals, Inc. 2016 (2) Inducement Plan (the "Inducement Plan"), which was adopted by our Board of Directors in March 2016 pursuant to NASDAQ Listing Rule 5635(c)(4).

2016 Inducement Plan

On March 4, 2016, the Board adopted the Inducement Plan to reserve 250,000 shares of its common stock to be used exclusively for grants of awards to individuals that were not previously employees or directors of the Company, as an inducement material to the individual's entry into employment with the Company within the meaning of Rule 5635(c)(4) of the NASDAQ Listing Rules. In February and May 2017, the share limit under the Inducement Plan was increased by 125,000 and 200,000 shares, respectively. In December 2018, the share limit under the Inducement Plan was further increased by 2,700,000 shares. There were no awards granted pursuant to the Inducement Plan during the year ended December 31, 2018. In accordance with NASDAQ Listing Rule 5635(c)(4), the Company did not seek

approval of the Inducement Plan by its stockholders, and the terms and conditions of the Plan are substantially similar to the Company's 2014 Performance Incentive Plan. Only "non-qualified" stock options under the Code may be awarded under the Inducement Plan.

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INFORMATION ABOUT OUR INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

Independent Registered Public Accounting Firm Fees and Services

The following table represents aggregate fees billed to us for fiscal years ended December 31, 2018 and 2017 by Deloitte & Touche LLP, our independent registered public accounting firm.

	Fiscal Year Ended December 31,	
	2018	2017
Audit Fees ⁽¹⁾	\$531,427	\$510,000
Audit-Related Fees	—	—
Tax Fees	—	—
All Other Fees ⁽²⁾	1,895	1,895
	\$533,322	\$511,895

(1) Audit fees for the fiscal years ended December 31, 2018 and 2017 consist of fees for professional services rendered in connection with the audit of our annual financial statements, review of our quarterly financial statements, assistance with registration statements filed with the SEC and services that are normally provided by our independent registered public accounting firm in connection with statutory and regulatory filings or engagements.

(2) All other fees for the fiscal years ended December 31, 2018 and 2017 consist of fees for all other services that are not reported above.

All fees described above were approved by our board of directors or the audit committee of the board of directors.

Pre-Approval Policies and Procedures

The audit committee has adopted policies and procedures for the pre-approval of audit and non-audit services provided by our independent registered public accounting firm, Deloitte & Touche LLP. The policy generally requires pre-approval for specified services in the defined categories of audit services, audit-related services and tax services up to specified amounts. Pre-approval may also be given as part of the audit committee's approval of the scope of the engagement of the independent registered public accounting firm or on an individual explicit case-by-case basis before the independent registered public accounting firm is engaged to provide each service. The pre-approval of services may be delegated to one or more of the audit committee's members, but the decision must be reported to the full audit committee at its next scheduled meeting.

The audit committee will review both audit and non-audit services performed by Deloitte & Touche LLP and the fees charged for such services on at least an annual basis. Among other things, the audit committee will review non-audit services proposed to be provided by Deloitte & Touche LLP and pre-approve such services only if they are compatible with maintaining Deloitte & Touche LLP's status as an independent registered public accounting firm. All services provided by Deloitte & Touche LLP in 2018 and 2017 were pre-approved by our board of directors or the audit committee after review of each of the services proposed for approval.

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REPORT OF THE AUDIT COMMITTEE OF THE BOARD OF DIRECTORS

The material in this report is being furnished and shall not be deemed “filed” with the Securities and Exchange Commission (the “SEC”) for purposes of Section 18 of the Securities Exchange Act of 1934, as amended (the “Exchange Act”), or otherwise subject to the liability of that section, nor shall the material in this section be deemed to be “soliciting material” or incorporated by reference in any registration statement or other document filed with the SEC under the Securities Act of 1933, as amended, or the Exchange Act, except as otherwise expressly stated in such filing.

The audit committee is currently comprised of three non-employee directors, J. Kevin Buchi, who chairs the committee, Stephen J. Hoffman, M.D., Ph.D. and Marc Kozin. Our board of directors has determined that Mr. Buchi, Dr. Hoffman, and Mr. Kozin meet the independence requirements set forth in Rule 10A-3(b)(1) under the Exchange Act and in the applicable NASDAQ rules. In addition, the board of directors has determined that Dr. Hoffman qualifies as audit committee financial experts as defined by SEC rules. The audit committee has the responsibility and authority described in the audit committee charter, which has been approved by the board of directors. A copy of the audit committee charter is available on our website at www.dicerna.com.

The audit committee is responsible for assessing the information provided by management and our independent registered public accounting firm in accordance with its business judgment. Management is responsible for the preparation, presentation and integrity of our financial statements and for the appropriateness of the accounting principles and reporting policies that are used. Management is also responsible for testing the system of internal controls and reports to the audit committee on any deficiencies found. Our independent registered public accounting firm, Deloitte & Touche LLP, is responsible for auditing the annual financial statements and for reviewing the unaudited interim financial statements.

In fulfilling its oversight responsibilities, the audit committee has reviewed and discussed the audited financial statements in our Annual Report on Form 10-K for the year ended December 31, 2018 with both management and our independent registered public accounting firm. The audit committee’s review included a discussion of the quality and integrity of the accounting principles, the reasonableness of significant estimates and judgments and the clarity of disclosures in the financial statements.

The audit committee reviewed with our independent registered public accounting firm the overall scope and plan of the audit. In addition, it met with our independent registered public accounting firm, with and without management present, to discuss the results of our registered public accounting firm’s examination, the evaluation of our system of internal controls, the overall quality of our financial reporting and such other matters as are required to be discussed under generally accepted accounting standards in the United States. The audit committee has also received from, and discussed with, our independent registered public accounting firm the matters required to be discussed by the applicable requirements of the Public Company Accounting Oversight Board (the “PCAOB”) and the SEC.

The audit committee has discussed with Deloitte & Touche LLP that firm’s independence from management and our company, including the matters in the written disclosures and the letter regarding independence from Deloitte & Touche LLP required by applicable requirements of the PCAOB. The audit committee has also considered the compatibility of audit related and tax services with the auditors’ independence. Based on its evaluation, the audit committee has selected Deloitte & Touche LLP as our independent registered public accounting firm for the fiscal year ending December 31, 2019.

In reliance on the reviews and discussions referred to above, the audit committee recommended to the board of directors, and the board of directors approved, the inclusion of the audited financial statements and management’s assessment of the effectiveness of our internal controls over financial reporting in the Annual Report on Form 10-K for the year ended December 31, 2018 filed with the SEC.

Audit Committee

J. Kevin Buchi (chairperson)

Stephen J. Hoffman, M.D., Ph.D.

Marc Kozin

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OTHER MATTERS

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 meeting, it is the intention of the persons named in the accompanying proxy to vote on such matters in accordance with their best judgment.

ADDITIONAL INFORMATION

Our website address is www.dicerna.com. The information in, or that can be accessed through, our website is not deemed to be incorporated by reference into this proxy statement. Our annual reports on Form 10-K, quarterly reports on Form 10-Q and current reports on Form 8-K and amendments to those reports are available, free of charge, on or through our website as soon as reasonably practicable after we electronically file such material with, or furnish it to, the SEC. The SEC maintains an Internet site that contains reports, proxy and information statements and other information regarding our filings at www.sec.gov. In addition, a copy of our Annual Report on Form 10-K for the fiscal year ended December 31, 2018 filed with the SEC is available without charge upon request to: Secretary, Dicerna Pharmaceuticals, Inc., at 87 Cambridgepark Drive, Cambridge, MA 02140, or by phone, at (617) 612-8097.

By Order of the Board of Directors

/s/ Douglas M. Fambrough, III, Ph.D.

Douglas M. Fambrough, III, Ph.D.

President and Chief Executive Officer

April 26, 2019

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